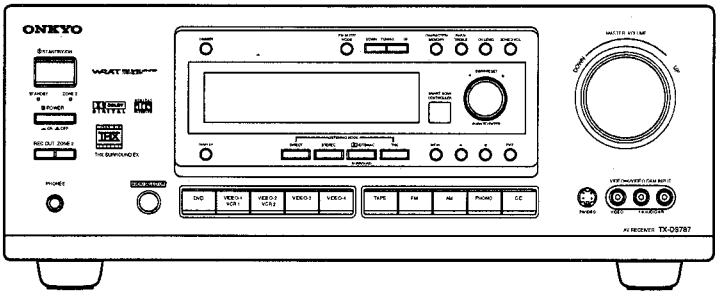
Ref. No. 3667
112000

ONKYO® SERVICE MANUAL

AUDIO VIDEO CONTROL RECEIVER MODEL TX-DS787



Black, Golden and Silver models

BMDD	120V AC, 60Hz
BMPP,SMPP BMPA,GMPA	230-240V AC, 50Hz
BMWT,BMWR GMWR,GMWT	220-230V/120V AC, 50/60 Hz
GMGT	220-230V AC. 50Hz

SAFETY-RELATED COMPONENT WARING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBER APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

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SPECIFICATIONS

AMPLIFIER SECTION

Continuous Average Power output (FTC)

All channels:	**100 W per channel min. RMS at 8Ω, 2 channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion. 130 W min. RMS at 6Ω, 2 channels driven from 1 kHz with no more than 0.1% total harmonic distortion.**
Continuous Power output (DIN)	135 W at 6Ω
Maximum Power output (EIAJ)	160 W at 6 Ω
Dynamic Power Output (Stereo)	2×250 W at 3 Ω
	2×210 W at 4 Ω
	2×130 W at 8 Ω
Total Harmonic Distortion:	0.08% at rated power
	0.08% at 1 W output
IM Distortion:	0.08% at rated power
	0.08% at 1 W output
Damping Factor:	60 at 8Ω
Input Sensitivity and Impedance	
PHONO:	2.5 mV, 50 kΩ
LINE (CD, TAPE, DVD, VIDEO 1-4):	200 mV, 50 kΩ
MULTICHANNEL INPUT (FRONT L/C/R, SURROUND L/R, SURROUND BACK L/R):	200 mV, 50 k Ω
(SUBWOOFER):	36 mV, 50 kΩ
COAXIAL 1, 2 (DIGITAL):	0.5 Vp-p, 75Ω
DVD, VIDEO1-4:	1 Vp-p, 75Ω
	1 Vp-p, 75 Ω (Y)
	0.28 Vp-p, 75Ω (C)
COMPONENT VIDEO 1, 2:	1 Vp-p, 75Ω (Y)
	0.7 Vp-p, 75Ω (PB, PR)
Output Level and Impedance	
Rec out (TAPE, VIDEO 1, 2):	
	200 mV, 2.2 kΩ
Pre out:	1 V, 470 Ω
VIDEO (VIDEO 1, 2, MONITOR OUT):	
	1 Vp-p, 75Ω
	1 Vp-p, 75Ω (Y)
	0.28 Vp-p, 75Ω (C)
COMPONENT VIDEO OUT:	1 Vp-p, 75Ω (Y)
	0.7 Vp-p, 75Ω (PB, PR)
Phono Overload:	110 mV RMS at 1 kHz, 0.5% T.H.D.
Frequency Response:	20 Hz to 30 kHz: 1 dB
	(CD in Direct mode)
	10 Hz to 100 kHz: +1 dB,-3 dB
	(CD in Direct mode)
RIAA Deviation:	20 Hz to 20 kHz : 0.8 dB
Tone Control	
Bass:	12 dB at 100 Hz
Treble:	12 dB at 10 kHz
Signal-to-Noise Ratio (Stereo)	
Phono:	80 dB (IHF A, 5 mV input)
CD/Tape:	100 dB (IHF A, 0.5 V input)
Muting:	- 50 dB

TUNER SECTION

FM

Tuning Range:	87.5 to 108.0 MHz (50 kHz steps)
Usable Sensitivity	
Mono:	11.2 dBf, 1.0 μV (75Ω IHF)
	0.9 μV (75 Ω DIN)
Stereo:	17.2 dBf, 2.0 μV (75Ω IHF)
	23 μV (75Ω DIN)
50 dB Quieting Sensitivity	
Mono:	17.2 dBf, 2.0 μV (75Ω)
Stereo:	37.2 dBf, 20 μV (75Ω)
Capture Ratio:	2.0 dB
Image Rejection Ratio:	
USA & Canadian models:	40 dB
Other area models:	85 dB
IF Rejection Ratio:	90 dB
Signal-to-Noise Ratio	
Mono:	76 dB
Stereo:	70 dB
Alternate Channel Attenuation:	55 dB
Selectivity:	50 dB (DIN)
AM Suppression Ratio:	50 dB
Total Harmonic Distortion	
Mono:	0.2%
Stereo:	0.3%
Frequency Response:	30 Hz to 15 kHz, 1.0 dB
Stereo Separation:	45 dB at 1 kHz
	30 dB at 100 Hz to 10 kHz

AM

Tuning Range	
USA & Canadian models:	530 to 1,710 kHz (10 kHz steps)
European & Australian models:	522 to 1,611 kHz (9 kHz steps)
Worldwide models:	531 to 1,602 kHz (9 kHz steps)
	530 to 1,710 kHz (10 kHz steps)
Usable Sensitivity:	30 μV
Image Rejection Ratio:	40 dB
IF Rejection Ratio:	40 dB
Signal-to-Noise Ratio:	40 dB
Total Harmonic Distortion:	0.7%

GENERAL

Power Supply:	AC 120 V, 60 Hz
	(USA & Canadian models)
	AC 230-240 V, 50 Hz
	(European & Australian models)
	AC 220-230 V, 50/60 Hz
	(some Asian models)
	AC 220-230 and 120 V switchable, 50/60 Hz (Worldwide models)
Power Consumption:	5.5 A
	440 W
Dimensions (W×H×D):	435 ×175×453 mm
	17-1/8" ×6-7/8" ×17-13/16"
Weight:	36.6 lbs. (USA & Canadian models)
	16.9 kg (European models)
	17.6 kg
	(Australian & worldwide models)
	17.4 kg (some Asian models)

REMOTE CONTROLLER

Transmitter:	Infrared
Signal range:	Approx. 5 meters, 16 ft.
Power supply:	Two "AA" batteries (1.5 V×2)

Specifications and features are subject to change without notice.

Power supply and voltage vary depending on the area in which the unit is purchased.

SERVICE RPOCEDURES

1. Replacing the fuses

This symbol located near the fuses indicates that the fuse used is fast operating type. F or continued protection against fire hazard, replace with same type fuse. F or fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'untiliser que fusibles de meme type. Ce darnier est la qu le present symbol est appse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F9001	252196	12A-UL/T-314,Fuse <D/WT/WR>
F9002	252244 or	5A-SE-TL250V or
	252078	5A-SE-EAK,Fuse <P/WT/WR/GT/A>
F9003	252241 or	2.5A-SE-TL250V or
	252075	2.5A-SE-EAK,Fuse <P/A>
F9201,F9202	252160	2.5A-UL/T-237,Fuse <D>
	252241 or	2.5A-SE-TL250V or
	252075	2.5A-SE-EAK,Fuse <P/A/WR/WT/GT>

Note: <D>:120V model only
<P>: European model only
<WT>: Worldwide model only
<WR>: Asian model only for 230V
<GT>: 220V model only
<A>: Australian model only

2. To initialize the unit

This device employs a microprocessor to perform v arious functions and operations. If interference generated by an e xternal power supply, radio wave, or other electrical source results in accident which causes the specif ied operations and functions to operate abnormally.
To perform a result, please follo w the procedure belo w.

1.Press and hold do wn the VIDEO-1 button, then press the SPEAKER A button.
2.After "clear" is displayed, the preset memory and each mode stored in the memory, such as surround, are initialized and will return to the factory setting.

3. Safety-check out

(Only U.S.A. model)
After correcting the original service problem, perform the following safety check before releasing the set to the customer . Connect the insulating-resistance tester between the plug of po wer supply cord and scre w on the back panel.
Specifications: 3.3Mohm ±10% at 500V.

4. Memory Preservation

This unit does not require memory preserv ation batteries. A built-in memory po wer back-up system preserv es the contents of the memory during po wer failures and e ven when the unit is unplugged. The unit must be plugged in order to char ge the back-up system.
The memory preserv ation period after the unit has been unplugged v aries depending on climate and placement of the unit. On the a verage, memory contents are protected o ver a period of a fe w weeks after the last time the unit has been unplugged. This period is shorter when the unit is e xposed to a highly humid climate.

5.Setting the AM tuning step frequency (Wolrdwide models only)

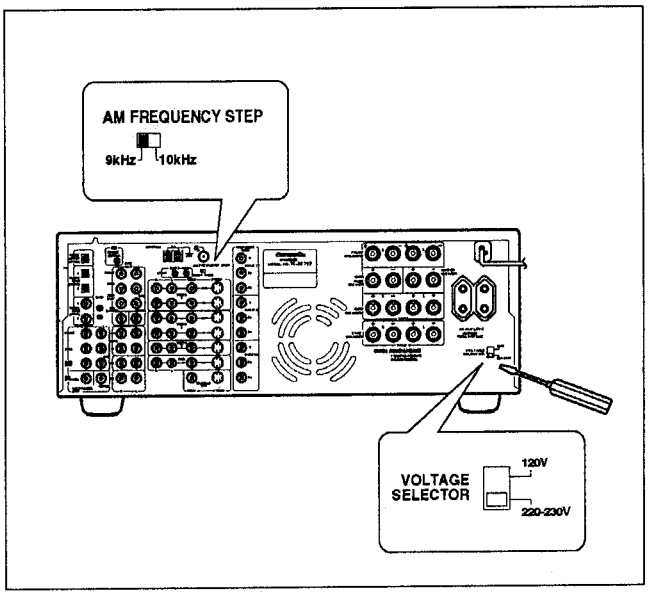
Worldwide models are equipped with a switch that controls the AM band tuning steps. Please set this switch to match the AM band tuning step frequenc y in your area.

U.S.A. and Canada : 10 kHz
Other areas : 9 kHz

6.Setting the Voltage selector (Worldwide models only)

Worldwide models are equipped with a v oltage selector to conform with local po wer supplies. Be sure to set this switch to match the v oltage of the po wer supply in your area before plugging in the unit.

1. Determine the proper v oltage for your area: 220-230 V or 120 V.
2. If the preset v oltage is not correct for your area, insert a screwdriver into the groo ve in the switch. Slide the switch all the w ay to the right (120 V) or to the left (220-230 V), whiche ver is appropriate.



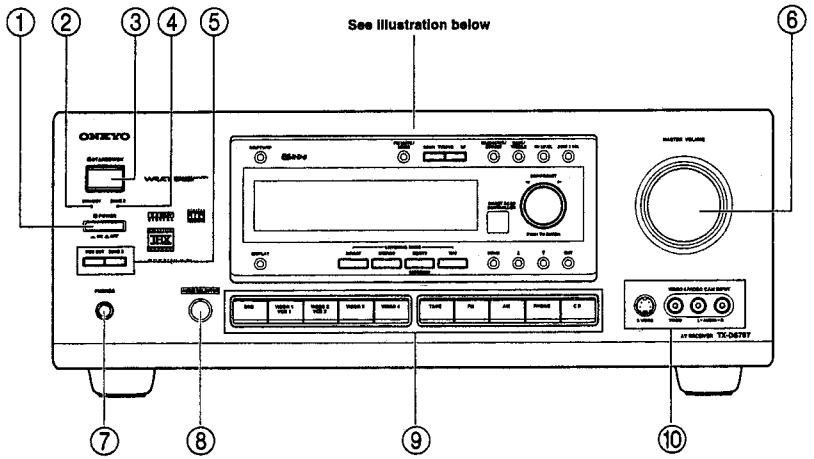
7. Changing the AM band step

With the exception of the worldwide models,a tuning step selector switch is not pro vided. When you change the band step, change the parts as sho wn below.

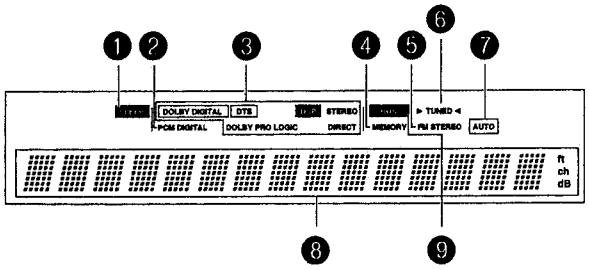
	To 10kHz	To 9kHz
R7079	Open	1k
R7078	1k	Open

PANEL VIEWS
FRONT PANEL

Front panel



Front panel display



Front panel facilities

Front panel

① POWER switch

Turns on and off the main power supply for the TX-DS787.

- Before turning on the power, make sure all cables are properly connected.
- Turning on the TX-DS787 may cause a momentary power surge that might interfere with other electrical equipment on the same circuit. If this is a problem, plug the TX-DS787 into a different electrical circuit.

② STANDBY indicator

Lights when the TX-DS787 is in the standby state and flashes when a signal is received from the remote controller.

③ STANDBY/ON button

Pressing this button while the main power is turned on the STANDBY indicator lights up and the front display turns off. Pressing it again returns it to the standby state. This state turns off the display, disables control functions.

④ ZONE 2 indicator

Lights when a signal is output to the remote zone (Zone 2). When the ZONE 2 indicator is off, then either output to the remote zone is turned off or Rec Out is selected.

⑤ REC OUT/ZONE 2 buttons

These buttons allow you to use the TX-DS787 to output to a remote zone (Zone 2) or to another component for recording purposes (Rec Out). Press the REC OUT button to output the audio and video signals to a recording component for recording purposes. Press the ZONE 2 button to enjoy the output from the TX-DS787 in a different room, which is referred to as a remote zone (Zone 2).

When either button is pressed, the currently selected input source for recording or outputting to the remote zone is displayed in the front panel display. If "SOURCE" is displayed, then the same input source as that selected for the main zone will be output.

To select an input source, press the desired button (REC OUT or ZONE 2) and then press one of the input source button within 3 seconds. That source will be output for recording or viewing in the remote zone. To turn off either the REC OUT or ZONE 2 output, when "SOURCE" is displayed, press the button again. "OFF" appears in the front display.

Notes:

- The Rec Out and Zone 2 buttons use the same circuit and therefore cannot be used at the same time. When Rec Out is selected, nothing is output to Zone 2, and vice versa.
- When not using Rec Out or Zone 2, turn off the signal. If turned on and the connected component is not turned on, the electric signal will still be sent through the circuitry and the excess load may cause deterioration of the audio signal.

⑥ MASTER VOLUME dial

The MASTER VOLUME dial is used to control the volume for the main zone. The volume for the remote zone (Zone 2) is independent.

⑦ PHONES jack

This is a standard stereo jack for connecting stereo headphones. The audio for the front right and left speakers are sent to the headphone speakers. When the headphones are plugged in, the listening mode automatically changes to stereo and output to the speakers is stopped.

⑧ AUDIO SELECTOR button

This button is used to select the type of audio input signal. Each time pressed, the setting cycles from "AUTO" → "Multichannel" → "Analog" and back.

AUTO (automatic detection): With this setting, the TX-DS787 automatically detects whether the input signal is digital or analog. When a digital signal is not input, then the analog signal is played.

Multichannel: Select this setting to play back the input from the component connected to the MULTI CHANNEL INPUT port. This setting is effective when the Multichannel setting in the Audio Setup sub-menu is set to "Yes".

Analog: Select this setting to play back the input from a source component connected to an AUDIO IN jack. With this setting, even if a digital signal is input from the same component, only the analog signal will be output.

⑨ Input Source Buttons (DVD, VIDEO 1–4, TAPE, FM, AM, PHONO, and CD)

These buttons are used to select the input source for the main zone. To select the input source for the remote zone (Zone 2) or recording out (Rec Out), first press the Zone 2 or Rec Out button, and then the desired input source button.

⑩ VIDEO 4/VIDEO CAM INPUT

These inputs are for connecting video cameras and other such equipment.

⑪ RT/PTY/TP (European models only) button

This button is only available on European models. Use this button to help tune into the Radio Data System (RDS) for FM broadcasting. RDS was developed within the European Broadcasting Union (EBU) and is available in most European countries. Each time the button is pressed, the display changes from RT (radio text) to PTY (program type) to TP (traffic program) and then back to RT again.

⑪ DIMMER (other than European models) button

Press to set the brightness of the front display. There are 3 settings available: normal, dark, and very dark.

- The dimmer control for the front display can also be performed at the remote controller.

⑫ Front display

Front panel facilities

⑬ FM MUTE/MODE button

If you are listening to an FM radio station in stereo and the sound cuts out or there is a great deal of noise, switch from STEREO to MONO. Each time this button is pressed, the AUTO indication flashes and the stereo mode changes from AUTO to MONO and vice versa. This button also turns on and off the FM MUTE.

⑭ TUNING UP/DOWN buttons

Use these buttons to change the tuner frequency. The tuner frequency is displayed in the front display and it can be changed in 50 kHz increments for FM and 10 kHz (or 9 kHz) increments for AM.

When FM is selected, you can hold down one of the tuning buttons and then release it to activate the auto-search feature. It will search for a station in the direction of the button you pressed and stop when it tunes into one.

⑮ CHARACTER/MEMORY button

This button is used to program names to preset radio stations and input sources, to change names previously programmed, or to delete names. This button is also used to assign the radio station that is currently tuned in to a preset channel or delete a previously preset station.

⑯ BASS/TREBLE button

Press to enter the mode for adjusting the bass and treble levels.

⑰ CH LEVEL button

Press to select the channel whose level is to be adjusted.

⑱ ZONE 2 VOL button

Press to enter the mode for adjusting the volume in the remote zone (Zone 2).

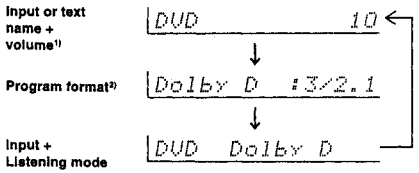
⑲ SMART SCAN CONTROLLER (SSC) dial

Turn clockwise or counterclockwise to select the setting for the parameter displayed in the front display. Press to move to the next parameter.

⑳ DISPLAY button

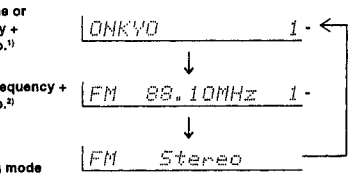
The DISPLAY button is used to display information about the current input source signal. Each time you press the display button, the screen changes to show you different information concerning the input signal.

When an input source other than FM or AM is selected:



1) You can program text name for each input source. That text name will be displayed at this time.
2) If the input signal does not have a program format, then this will be skipped.

When FM or AM is selcted as the input source:



1) Not displayed if there is no text name programmed for the preset channel.
2) If a text name is programmed for the preset channel, display "2" is displayed for 3 seconds each time the input is changed from FM to AM or vice versa.

㉑ LISTENING MODE buttons

Press these buttons to select a listening mode for the current input source.

DIRECT: Select for direct audio output that does not pass through sound alteration circuits and other filters.

STEREO: Select for normal stereo output.

DD/DTS SURROUND: Select for the Dolby Pro Logic, Dolby Digital, or DTS listening modes.

THX: Select for the THX listening mode.

㉒ Remote control sensor

㉓ MENU button

Press to bring up the OSD menu. The OSD menu will appear on the TV monitor as well as the front display on the TX-DS787.

㉔ ▲ and ▼ buttons

When selecting items in the OSD Menu, press these buttons to move the on-screen cursor (or the highlighted portion) upward and downward.

㉕ EXIT button

Press to exit the OSD menu when at the Menu Screen, or move to one screen previous to the one that is displayed if at any other screen.

Front panel display

❶ **SLEEP indicator**

❷ **PCM DIGITAL indicator**

❸ **Listening mode or digital input format indicator**

❹ **MEMORY indicator**

❺ **FM STEREO indicator**

Lights when tuned into an FM radio broadcast in stereo.

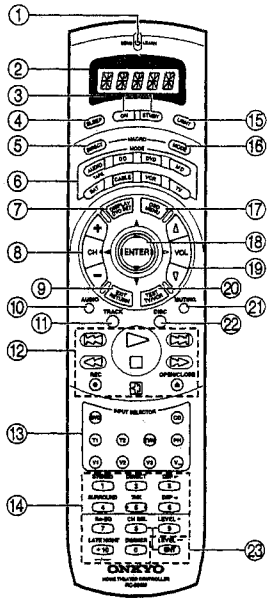
❻ **TUNED indicator**

❼ **AUTO indicator**

❽ **Multi function display**

❾ **RDS indicator (European models only)**

REMOTE CONTROLLER



① SEND/LEARN indicator

Lights red when sending a signal.

② LCD display

Displays the component being operated or the operation status.

③ ON/STNBY button

ON: Turns on the TX-DS787.

STNBY: Places the TX-DS787 in the standby state.

Be aware that pressing the STNBY button only places the TX-DS787 in standby and does not turn the power completely off.

④ SLEEP button

For setting the sleep time.

⑤ DIRECT MACRO button

For executing and programming the Direct Macro function.

⑥ MODE buttons

For selecting the component to be operated by the remote controller.

⑦ DISPLAY/DVD SET button

For changing the display in the front display. However, when in the DVD mode, this button displays the DVD setup menu.

⑧ CH +/– button

For selecting a tuner preset channel.

⑨ EXIT/RETURN button

For entering the selected setting and returning to the previous screen.

⑩ AUDIO button

For selecting the audio input signal. The setting changes from "AUTO" to "Multichannel" to "Analog" and back each time this button is pressed.

⑪ TRACK button

For selecting a track when playing back a compact disc.

⑫ CD/TAPE/DVD/MD operation buttons

For operating Onkyo components connected to the TX-DS787.

⑬ INPUT SELECTOR buttons

For selecting the input source. To select Video 4, press the V- button and then 4 of the numerical keys.

⑭ Numeric key/STEREO/DIRECT/THX/ DSP-◄, ►/SURROUND/Re-EQ/LATE NIGHT/ CH SEL/LEVEL+,–/DIMMER buttons

For entering the number of a track.
You can also select a listening mode, set the speaker output level, and adjust the brightness of the front display (DIMMER).

⑮ LIGHT button

For illuminating the buttons of the remote controller.

⑯ MODE MACRO button

For executing and programming the Macro function.

⑰ OSD/MENU button

For displaying the OSD Menu. However, when in the DVD mode, this button displays the DVD menu.

⑱ ENTER/cursor button

When selecting items in the OSD Menu, press the upper and lower portions to move the on-screen cursor (or highlighted portion) upward and downward, press the right and left portions to select parameter values or modes, and press ENTER to display the screen for the selected item.

⑲ VOL △/▽ button

For adjusting the volume.

⑳ TEST/TV/VCR button

For setting the output levels for each speaker. Programs the TV/VCR switching mode when programming the remote controllers of other components.

㉑ MUTING button

Activates the mute function.

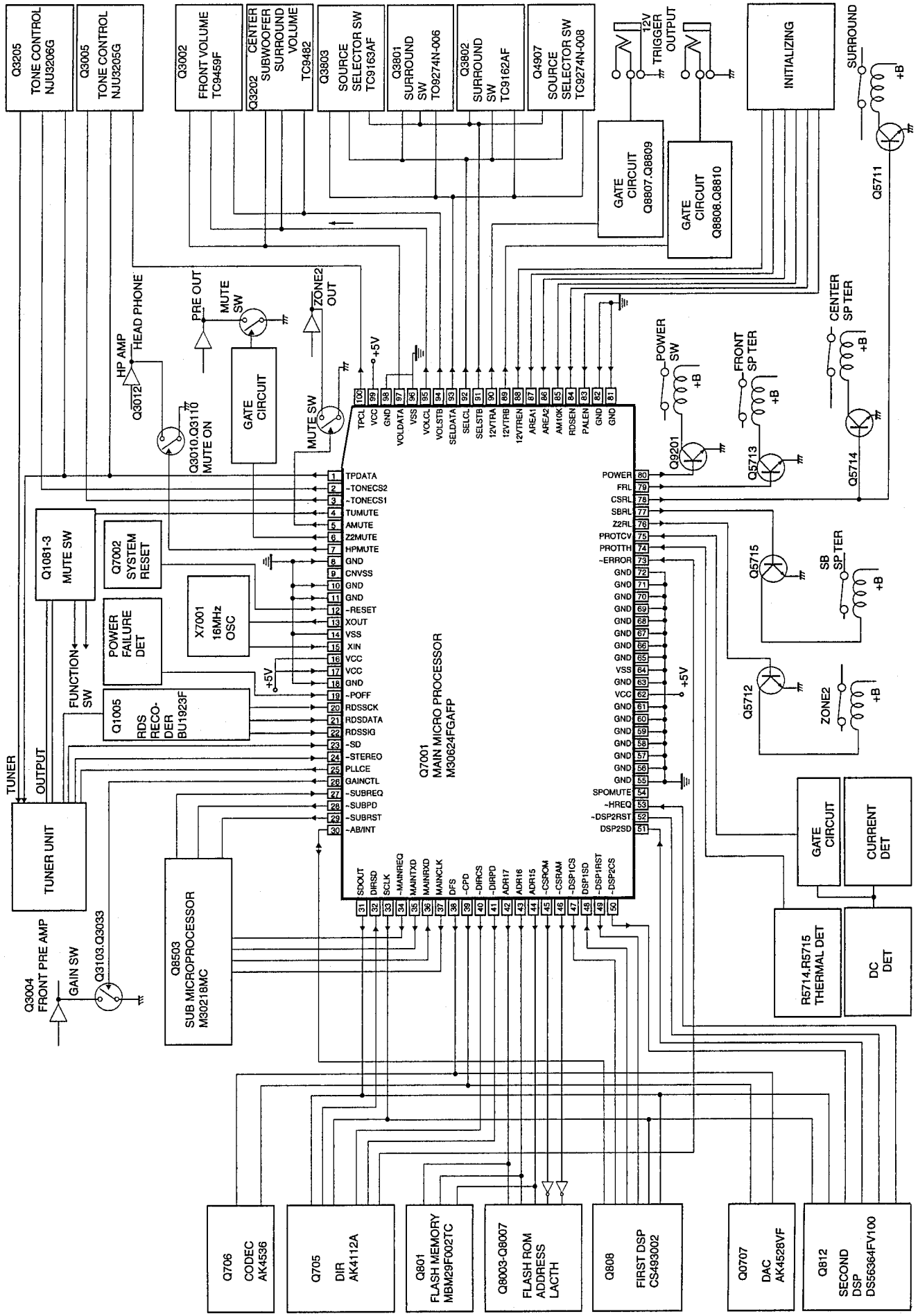
㉒ DISC button

For selecting the compact disc for playback when using a CD changer.

㉓ ENT button

For entering setting when operating MD or DVD players.

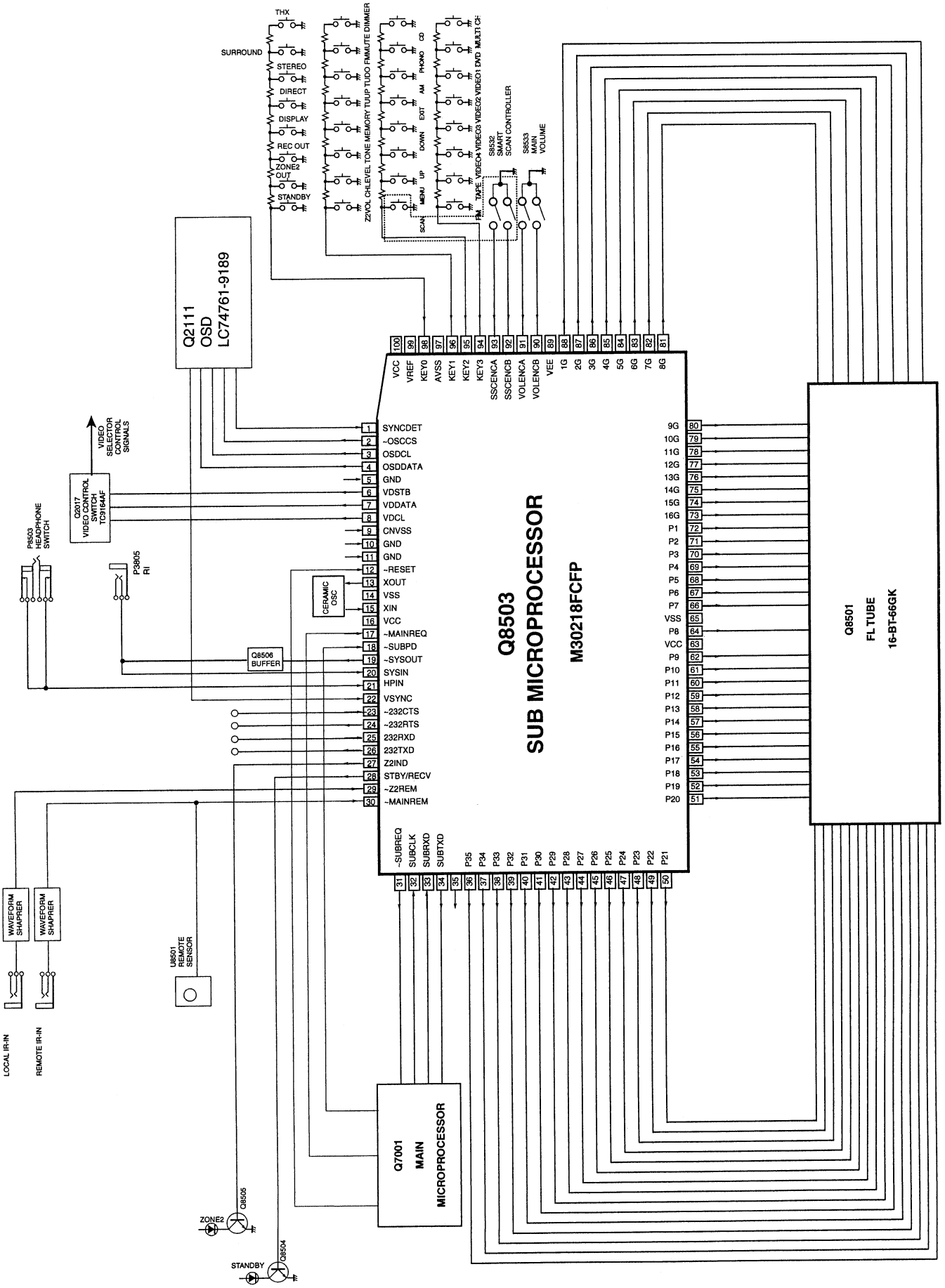
MAIN MICROPROCESSOR-CONNECTION VIEW



MAIN MICROPROCESSOR-TERMINAL DESCRIPTION

No.	Function	I/O	Act	Description
1	TPDATA	O	H	Data output terminal to the tone ICs and PLL IC.
2	~TONECS2	O	L	Chip select output terminal for tone IC 2.
3	~TONECS1	O	L	Chip select output terminal for tone IC 1.
4	TUMUTE	O	H	Muting control output terminal for tuner section
5	AMUTE	O	H	Muting control output terminal for audio section
6	Z2MUTE	O	H	Muting control output terminal for zone 2 section
7	HPMUTE	O	H	Muting control output terminal for headphone amplifier section
8	GND	I		Select input terminal for external data buss width. Connect to the ground
9	CNVSS	I		Input terminal to change the processor mode.
10,11	GND	I		Not used. Connect to the ground terminal.
12	~RESET	I	L	Reset signal input terminal of microprocessor
13	XOUT	O		Output terminal of main clock oscillator circuit. Connect the 16MHz ceramic
14	VSS			Power supply terminal. Connect to the ground terminal.
15	XIN	I		Input terminal of main clock oscillator circuit. Connect to the 16MHz ceramic
16	VCC			Power supply terminal. Apply +5V.
17	VCC	I	L	Not used. Apply +5V.
18	GND	I		Not used. Connect to the ground terminal.
19	~POFF	I	L	Power failure detector input terminal.
20	RDSSCK	I	CLK	Clock signal input terminal from RDS decoder.
21	RDSDATA	I	H	Data signal input terminal from RDS decoder
22	RDSSIG	I	H	Quality check input terminal of data signal from RDS decoder.
23	~SD	I	L	Broadcast detector input terminal
24	~STEREO	I	L	Stereo broadcast detection input terminal
25	PLLCE	O	H	Chip enable signal output terminal to PLL IC.
26	GAINCTL	O	H	Output terminal to control the gain of amplifier.
27	~SUBREQ	I	L	Transfer request signal input terminal from sub microprocessor.
28	~SUBPD	O	L	Signal output terminal to announce the power failure to the sub microprocessor.
29	~SUBRST	O	L	Reset output terminal to the sub microprocessor.
30	~AB/INT	I/O	H	Interrupter signal of DSP IC 1 and abort signal terminal.
31	SDOUT	O	H	Serial data output terminal for DIR and DSP ICs.
32	DIRSD	I	H	Serial data input terminal for DIR IC.
33	SCLK	O	CLK	Serial clock output terminal for DIR and DSP ICs.
34	~MAINREQ	O	L	Transfer request signal output terminal to main microprocessor.
35	MAINTXD	O	H	Transfer output terminal to main microprocessor.
36	MAINRXD	I	H	Transfer input terminal from main microprocessor
37	MAINCLK	O	CLK	Transfer clock output terminal to microprocessor
38	DFS	O	H	DFS signal output terminal to Codec and D/A converter ICs.
39	~CPD	O	L	Data output terminal to DAC and Codec ICs.
40	~DIRCS	O	L	Chip select output terminal for DIR IC.
41	~DIRPD	O	L	Data output terminal to the DIR IC.
42	ADR17	O	H	External ROM address 17 for DSP IC 1.
43	ADR16	O	H	External ROM address 16 for DSP IC 1.
44	ADR15	O	H	External ROM address 15 for DSP IC 1.
45	~CSROM	O	L	Chop select output terminal to the mask ROM IC.
46	~CSRAM	O	L	Chip select signal output terminal for 1M bit SRAM.
47	~DSP1CS	O	L	Chip select output terminal of DSP IC 1.
48	DSP1SD	I	H	Serial data input terminal from DSP IC 1.
49	~DSP1RST	O	L	Reset signal output terminal to DSP IC 1.
50	~DSP2CS	O	L	Chip select output terminal to DSP IC 2.
51	DSP2SD	I	H	Serial data input terminal form DSP IC 2.
52	~DSP2RST	O	L	Reset output terminal for DSP IC 2.
53	~HREQ	I	L	Request input terminal for DSP IC 2.
54	SPOMUTE	O	H	Muting output terminal for surround pre output.
55-61	GND	I		Not used. Connect to the ground terminal.
62	VCC			Power supply terminal. Apply +5V.
63	GND	I		Not used. Connect to the ground terminal.
64	VSS			Power supply terminal . Connect to the ground terminal.
65-72	GND	I		Not used. Connect to the ground terminal.
73	~ERROR	I	L	Error detector input terminal of DIR IC.
74	PROTTH	I	L	Protect input terminal from the thermal detector circuit.
75	PROTCV	I	H	Protect input terminal from the voltage and current detector circuits.
76	Z2RL	O	H	Speaker relay control output terminal for ZONE 2.
77	SBRL	O	H	Speaker relay control output terminal for the surround back channel.
78	CSRL	O	H	Speaker relay control output terminal for the center and the surround channels.
79	FRL	O	H	Speaker relay control output terminal for the front channel.
80	POWER	O	H	Power control output terminal.
81,82	GND	I		Not used. Connect to the ground terminal.
83	PALEN	I	H	Initializing input terminal for PAL. H=PAL/NTSC L=NTSC
84	RDSEN	I	H	Initializing input terminal for RDS broadcast.
85	AM10K	I	H	Initializing input terminal for AM band step. H=10 kHz
86	AREA2	I	H	Initializing input terminal for FM band region.
87	AREA1	I	H	Initializing input terminal for FM band region.
88	12VTREN	I	H	Initializing input terminal for 12V trigger.
89	12VTRB	O	H	12V trigger output terminal B.
90	12VTRA	O	H	12V trigger output terminal A.
91	SELSTB	O	H	Strobe output terminal for analog switch ICs.
92	SELCL	O	CLK	Clock output terminal to analog switch ICs.
93	SELDATA	O	H	Data output terminal to analog switch ICs.
94	VOLSTB	O	H	Strobe output terminal to electrical volume IC.
95	VOLCL	O	CLK	Clock signal output terminal to electric volume IC.
96	VSS			Power supply terminal for A/D converter IC.
97	VOLDATA	O	H	Data signal output terminal to electric volume IC.
98	GND			Reference voltage input terminal for A/D converter. Not used.
99	VCC			Power supply terminal for A/D converter. Apply +%V.
100	TPCL	O	CLK	Clock signal output terminal for tone and PLL ICs.

SUB MICROPROCESSOR-CONNECTION VIEW



SUB MICROPROCESSOR-TERMINAL DESCRIPTION

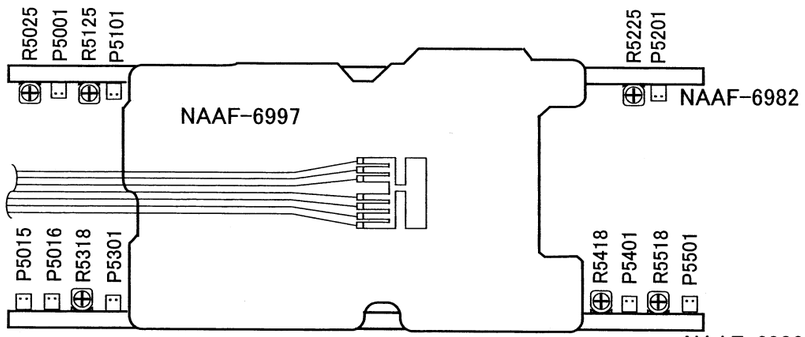
No.	Function	I/O	Act	Descriptions
1	SYNCDET	I	H	Judge input terminal for external synchronizing of OSD. External synchronizing when high level.
2	~OSCCS	O	L	Chip select output pin of OSD IC
3	OSDCL	O	CLK	Serial clock output terminal of OSD IC
4	OSDDATA	O	H	Serial data output terminal of OSD IC
5	GND	I		Not used. Connect to the ground terminal.
6	VDSTB	O	H	Strobe output terminal of analog switch for video control.
7	VDDATA	O	H	Data output terminal of analog switch for video control
8	VDCL	O	CLK	Clock output terminal of analog switch for video selector
9	CNVSS	I		Input terminal to select the operation mode when the release of reset.
10	GND	I		Not used. Connect to the ground terminal.
11	GND	I		Not used. Connect to the ground terminal.
12	~RESET	I	L	Reset terminal of microprocessor
13	XOUT	O		Output terminal of oscillator circuit for main clock. Connect the ceramic oscillator
14	VSS			Ground terminal
15	XIN	I		Input terminal of oscillator circuit for main clock. Connect the ceramic oscillator
16	VCC			Power supply terminal (+5V)
17	~MAINREQ	I	L	Transfer request signal input terminal from main microprocessor
18	~SUBPD	I	L	Signal input terminal to announce the power stoppage from main microprocessor
19	~SYSOUT	O	L	Output terminal for system code
20	SYSIN	I	H	Input terminal for system code
21	HPIN	I	H	Input terminal to detect the insertion of headphone jack.
22	VSYNC	I	H	Vertical synchronizing signal input terminal. When there is the video signal, the negative vertical synchronizing signal is input to this terminal.
23	~232CTS	I	L	Judge input terminal for RS-232C data transfer
24	~232RTS	O	L	RS-232C data transfer request terminal
25	232RXD	I	H	RS-232C data input terminal
26	232TXD	O	H	RS-232C data output terminal
27	Z2IND	O	H	ZONE2 indicator control output terminal.
28	STBY/RECV	O	H	STANDBY/RECEIVED indicator control output terminal
29	~Z2REM	I	L	Remote control signal input terminal from ZONE 2 terminal.
30	~MAINREM	I	L	Remote control input terminal.

No.	Function	I/O	Act	Descriptions
31	~SUBREQ	O	L	Transfer request signal output terminal from sub microprocessor
32	SUBCLK	I	CLK	Transfer clock input terminal between microprocessors.
33	SUBRXD	I	H	Transfer input terminal between microprocessors
34	SUBTXD	O	H	Transfer output terminal between microprocessors
35		O	L	Not used.
36-62	P35-P9	O	H	Segment output terminals
63	VCC			Power supply terminal. Connect to +5V.
64	P8	O	H	Segment output terminal
65	VSS			Power supply terminal. Connect to the ground terminal.
66-72	P7-P1	O	H	Segment output terminals
73-88	16G-1G	O	H	Grid output terminals
89	VEE			Power supply terminal for pull-down resistor.
90	VOLENCB	I	L	Rotary encoder input signal terminal B for main volume.
91	VOLENCA	I	L	Rotary encoder input signal terminal A for main volume.
92	SSCENCB	I	L	Rotary encoder signal input terminal B for SSC.
93	SSCENCA	I	L	Rotary encoder signal input terminal A for SSC.
94	KEY3	I	H	Operation key connection terminal
95	KEY2	I	H	Operation key connection terminal
96	KEY1	I	H	Operation key connection terminal
97	AVSS			Power supply te4minl for A/D converter
98	KEY0	I	H	Operation key connection terminal
99	VREF			Reference voltage input terminal for A/d converter.
100	VCC			Power supply terminal for A/D converter. Connect to +5V.

ADJUSTMENT AND CONFIRMATION

Idling current adjustment

Before Idling adjustment, turn the trimming resistors R5025, R5125, R5225, R5318, R5418 and R5518 to counter clockwise.
Connect the DC voltmeter to sockets P5001,P5101, P5201, P5301, P5401 and P5501.
After turn POWER to ON, adjust the trimming resistors R5025, R5125, R5225, R5318, R5418 and R5518 so that the reading of voltmeter becomes 8.0 mV.
After adjustment, attach the top cover.
Confirm the voltage of above points after five minutes.
When less than 12 mV, readjust the above resistors so that the voltage becomes 12 mV.
When 12 mV to 15 mV, you are not necessary to adjust.
When more than 15 mV, readjust the above resistors so that the voltage becomes 15 mV.
Note: No load and No signal



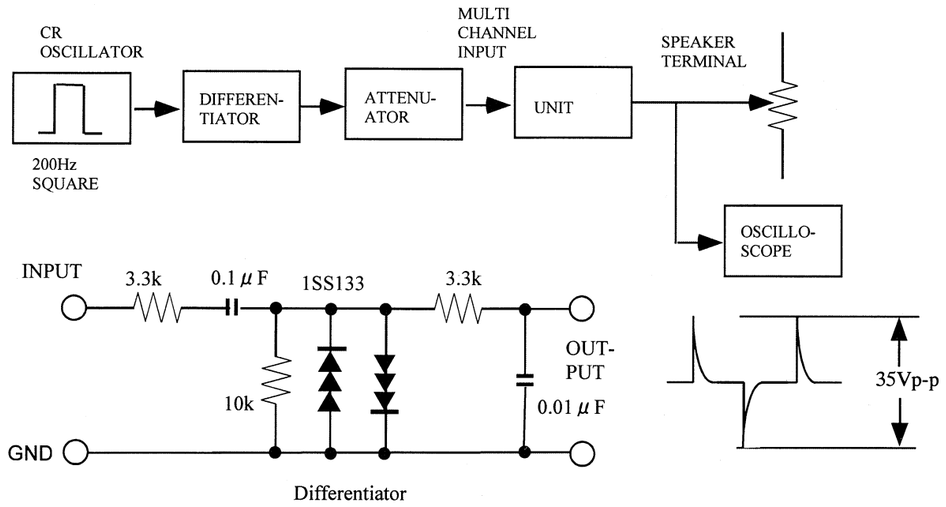
NAAF-6983

Confirmation of protection circuit

1. Confirmation of speaker relay
Confirm that the speaker relay turns ON approximate 5 seconds after the power switch is turned ON.
Confirm that the speaker relay turns OFF immediately after the power switch is turned OFF.

2. Confirmation of DC detection circuit
Be short-circuited of the test terminal P5601 to prevent the protection circuit being fixed on with a short plug.
Press and hold down CD button, then press REC OUT and ZONE 2 buttons at the same time.
During "TEST-0" on the FL tube light on and off, press VIDEO 1 button to set the unit to TEST-1-00.
Apply DC 1.5～3V to MULTI CHANNEL INPUT terminals with no load.
Confirm that the speaker relay turns OFF.
Apply DC -1.5～-3V to MULTI CHANNEL INPUT terminals with no load.
Confirm that the speaker relay turns OFF.
Note: Don't apply DC voltage more than 1 second.

3. Confirmation of Current detection circuit
Be short-circuited of the test terminal P5601 to prevent the protection circuit being fixed on with a short plug.
Press and hold down CD button, then press REC OUT and ZONE 2 buttons at the same time.
During "TEST-0" on the FL tube light on and off, press VIDEO 1 button to set the unit to TEST-1-00.
Connect Differentiator and apply the 200Hz square signal to the terminal of MULTI CHANNEL INPUT.
Adjust the attenuator or Volume so that the output level becomes 35V p-p.
Confirm that the speaker relay does not turn OFF when a 3.0 ohm load is connected.
Confirm that the speaker relay turns OFF when a 1.5 ohm load is connected.



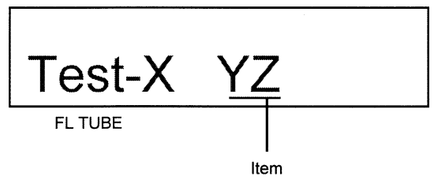
Differentiator

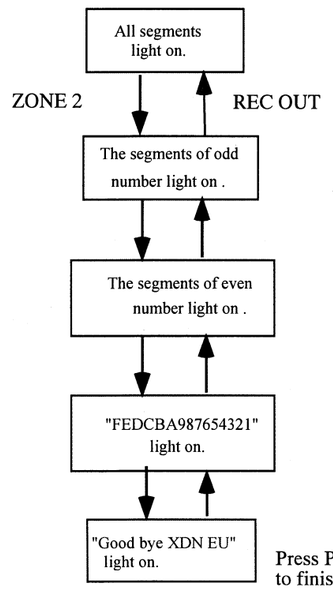
Confirmation of Fan
Set the unit to "TEST-1-00" and apply the signal 1kHz, -30dB (32 mV) to Multi channel inputs except Sub Woofer with no load. Confirm that the fan turns after few seconds.
Connect the resistor 2.7kohms, 1W between terminal P5015 with no input. Confirm that the fan turns after few seconds.

Test Mode

1. Turn POWER button on.
2. Press and hold down CD button, then press REC OUT and ZONE 2 buttons at the same time.
3. During "TEST-1" on the FL tube is displayed, press CD button to set the unit to the test mode of FL tube.
Note: VIDEO 1 TEST-1 VIDEO 2 TEST-2
VIDEO 3 TEST-3 VIDEO 4 TEST-4

Test mode of FL tube
Press ZONE 2 or REC OUT button to change the test mode of FL tube.



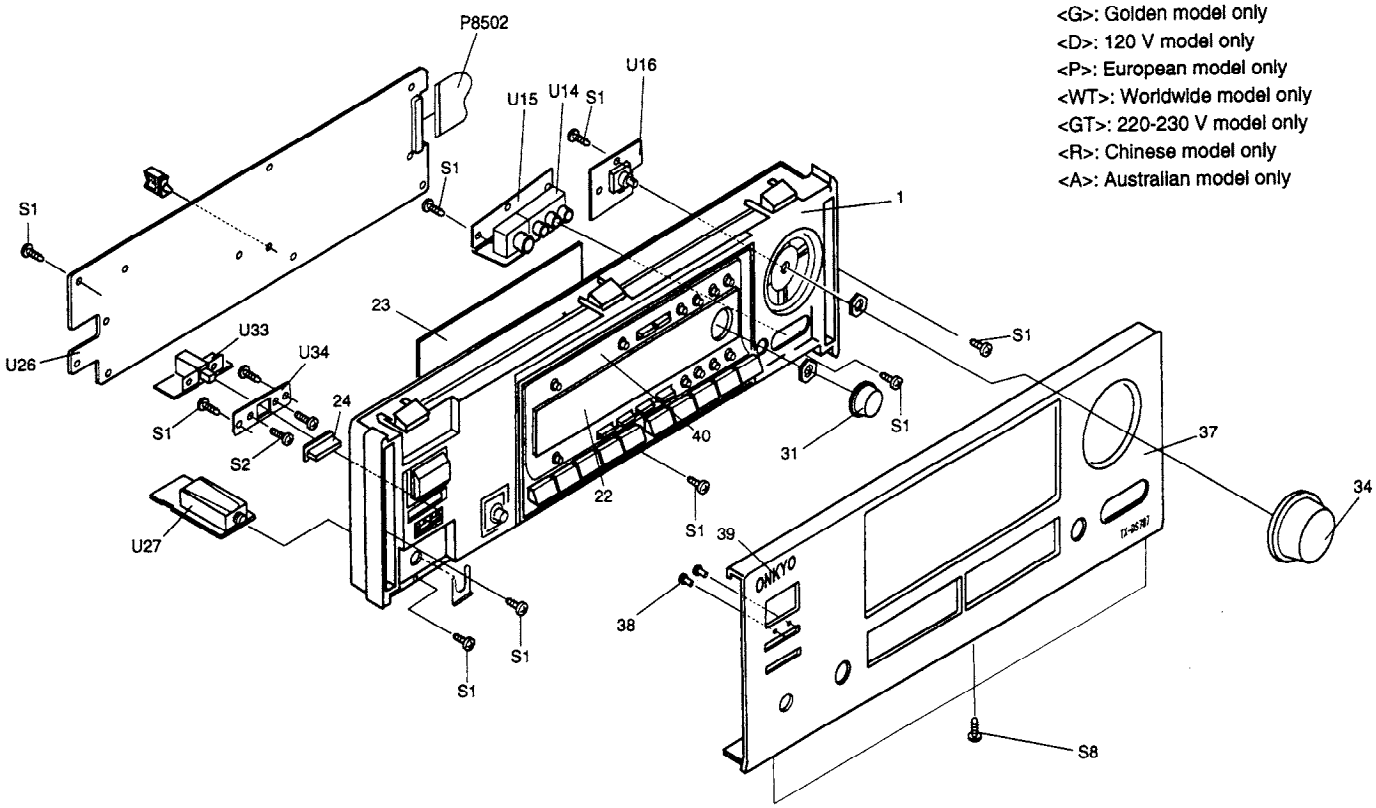


XNO EU
1 2 3 4
1. 12V Trigger T: Use
2. Video Mode N: NTSC P: PAL AUTO
3. AM band step 9: 9 kHz step 0:10 kHz step
4. Tuner band EU:Europe US: USA SA:Saudi JP:Japan

Press POWER button
to finish the test mode of FL tube.

EXPLODED VIEW AND PARTS LIST
FRONT PANEL SECTION

NOTE: <B>:Black model only
<S>: Silver model only
<G>: Golden model only
<D>: 120 V model only
<P>: European model only
<WT>: Worldwide model only
<GT>: 220-230 V model only
<R>: Chinese model only
<A>: Australian model only



REF. NO.	PART NO.	DESCRIPTION
1	27111183	Front bracket <B>
	27111184	Front bracket <S>
	27111185	Front bracket <G>
22	28191903A	Clear plate
23	28133385	Back plate <B>
	28133386	Back plate <G/S>
24	28325497A	Knob, power <B>
	28325499A	Knob, power <G>
	28325547A	Knob, power <S>
31	28325665	Knob SS <B>
	28325666	Knob SS <G>
	28325786	Knob SS <S>
34	28325651	Knob, volume <B>
	28325652	Knob, volume <S>
	28325653	Knob, volume <G>
37	27212245	Front panel <B>
	27212246	Front panel <S>
	27212247	Front panel <G>
38	28198778	Facet
39	28135244	Badge <B>
	28135245	Badge <G/S>
40	27215340	Decorative frame <B> <D/WT/R/A>
	27215341A	Decorative frame <B> <P>
	27215342A	Decorative frame <S>
	27215343	Decorative frame <G>
P8502	2047351512	NCFC7-351512,Flexible flat cable
S1	838130088	3TTB+8B,Self-tapping screw
S2	82143010	3P+10FN(BC),Pan head screw
S8	838130088	3TTB+8B,Self-tapping screw

REF. NO.	PART NO.	DESCRIPTION
U14	1A884592-1A	NAETC-6992-1A, Front terminal PC board ass'y <D>
	1A884592-1B	NAETC-6992-1B, Front terminal PC board ass'y <P>
	1A884592-1C	NAETC-6992-1C, Front terminal PC board ass'y <WT/GT/R/A>
U15	25136993	NCETC-6993, Holder PC board
U16	1A884594-1A	NAETC-6994-1A, Volume PC board ass'y <D>
	1A884594-1B	NAETC-6994-1B, Volume PC board ass'y <P>
	1A884594-1C	NAETC-6994-1C, Volume PC board ass'y <WT/GT/R/A>
U26	1A884502-1A	NADIS-7002-1A, Display circuit PC board ass'y <D>
	1A884502-1B	NADIS-7002-1B, Display circuit PC board ass'y <P>
	1A884502-1C	NADIS-7002-1C, Display circuit PC board ass'y <GT/A>
	1A884502-1D	NADIS-7002-1D, Display circuit PC board ass'y <WT/R>
U27	1A884503-1A	NAETC-7003-1A,Headphone terminal PC board ass'y <D>
	1A884503-1B	NAETC-7003-1B,Headphone terminal PC board ass'y <P>
	1A884503-1C	NAETC-7003-1C,Headphone terminal PC board ass'y <GT/A>
	1A884503-1D	NAETC-7003-1D,Headphone terminal PC board ass'y <WT/R>
U33	1A884511-1A	NASW-7011-1A, Power switch PC board ass'y <D>
	1A884511-1B	NASW-7011-1B, Power switch PC board ass'y <P>
	1A884511-1D	NASW-7011-1D, Power switch PC board ass'y <WT>
	1A884511-1E	NASW-7011-1E, Power switch PC board ass'y <R>
	1A884511-1F	NASW-7011-1F, Power switch PC board ass'y <GT>
	1A884511-1I	NASW-7011-1I, Power switch PC board ass'y <A>

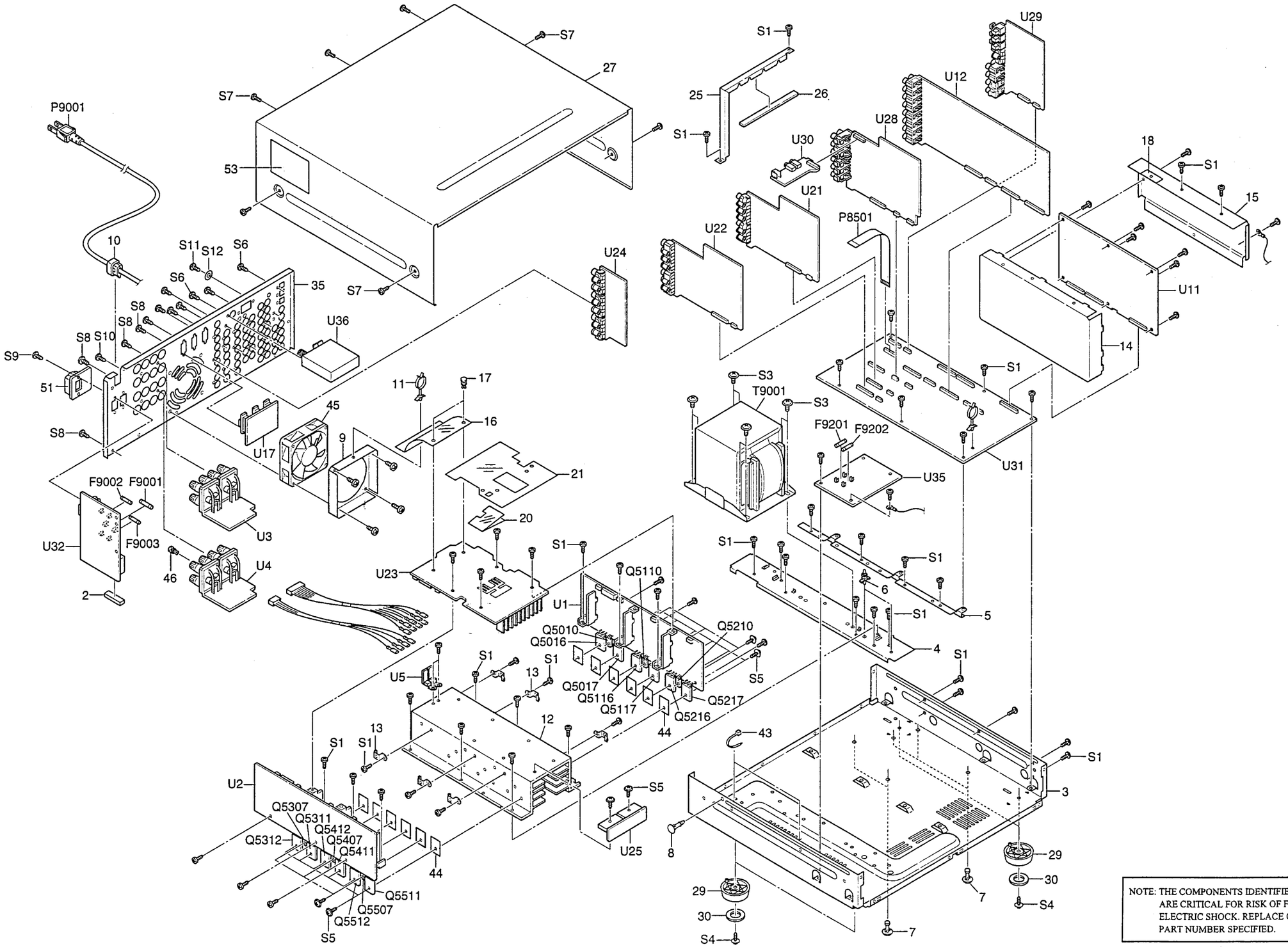
PARTS LIST

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same bata group (HFE) as the original type.

REF. NO.	PART NO.		DESCRIPTION
2	28141439		Cushion
3	27100385		Chassis
4	27130840		Bracket PT
5	27130841		Bracket PC
6	27190009		KGLS-4S,Holder
7	27190813		KGPS-10RF,Holder
8	27190266		KGLS-12RF,Holder
9	27130857		Bracket F
10	27300750	⚠	Cord,bushing
11	27301396		HL-28-0,Clamp
12	27160473A		Heatsink
13	27141764		Retainer PC
14	27130842		Bracket,display B
15	27130843		Bracket,display A
16	27150458		Shield plate F
17	880048		Plastic rivet
18	29110083		Tape, cloth
20	27150457		Shield plate E
21	27150459		Shield plate U
25	27130844		Bracket U
26	28141433		Cushion
27	28184796B		Top cover <B>
	28184797B		Top cover <G>
	28184798B		Top cover <S>
29	27175319A		Leg
30	28141332		Cushion
35	27122746		Rear panel <D>
	27122747		Rear panel <P>
	27122749		Rear panel <WT>
	27122750A		Rear panel <R>
	27122751		Rear panel <GT>
	27122752		Rear panel <A>
41	260220		WS-3NS,Wire clamp
42	27301394		HL-18-0,Clamp
43	260208		Wire tie
44	223025		AC262,Isolated sheet
45	24502311		D08A-24TG(EX),Fan
46	880048		P-3055B-8L,Plastic rivet <P/A>
49	29110153		Tape, copper
51	27191130		Holder, outlet <R>
53	29362743A		Label
S1	838130088		3TTB+8B,Self-tapping screw
S3	830440089		4TTC+8C(BC),Self-tapping screw
S4	831430088		3TTW+8B(BC),Self-tapping screw
S5	801433		3SMS8W.SW+14B(BC),Special screw
S6	838430068		3TTB+6B(BC),Self-tapping screw
S7	838430088		3TTB+8B(BC),Self-tapping screw <B>
S7	838930088		3TTB+8B(UN),Self-tapping screw <G/S>
S8	838430088		3TTB+8B(BC),Self-tapping screw
S9	838430107		3TTB+10S(BC),Self-tapping screw
S10	838450108		5TTB+10B(BC),Self-tapping screw
S11	838930088		3TTB+8B(UN),Self-tapping screw
S12	87643010		W3*10F(BC),Flat washer
F9001	252196	⚠	12A-UL/T-314,Fuse <D/WT/R>
F9002	252244 or	⚠	5A-SE-TL250V or
	252078	⚠	5A-SE-EAK, Fuse <P/WT/GT/R/A>
F9003	252241 or	⚠	2.5A-SE-TL250V or
	252075	⚠	2.5A-SE-EAK,Fuse <P/A>
F9201,F9202	252160	⚠	2.5A-UL/T-237,Fuse <D>
	252241 or	⚠	2.5A-SE-TL250V or
	252075	⚠	2.5A-SE-EAK,Fuse <P/WT/GT/R/A>
P8501	2047152012		NCFC7-152012,Flexible flat cable
P9001	253197HIT	⚠	AS-SAA, Power supply cord <A>
	253233KAW	⚠	AS-CEE-2,Power supply cord <P/WT/GT>
	253286VOL,	⚠	AS-CCEE,
	253267KAW or	⚠	AS-CCEE or
	253285HIT	⚠	AS-CCEE,Power supply cord <R>
	253279HIT or	⚠	AS-UC-2#18 or
	253280VOL	⚠	AS-UC-2#18, Power supply cord <D>
Q5010,Q5110	2212654 or	*	2SC3421-Y or
Q5210	2212653	*	2SC3421-O,Transistor
Q5016,Q5116	2202822 or	*	2SC5200-R or
Q5216,	2202823	*	2SC5200-O,Transistor
Q5017,Q5117	2202812 or	*	2SA1943-R or
Q5217	2202813	*	2SA1943-O,Transistor
Q5307,Q5407	2212654 or	*	2SC3421-Y or
Q5507	2212653	*	2SC3421-O,Transistor
Q5311,Q5411	2202822 or	*	2SC5200-R or
Q5511	2202823	*	2SC5200-O,Transistor
Q5312,Q5412	2202812 or	*	2SA1943-R or
Q5512	2202813	*	2SA1943-O,Transistor

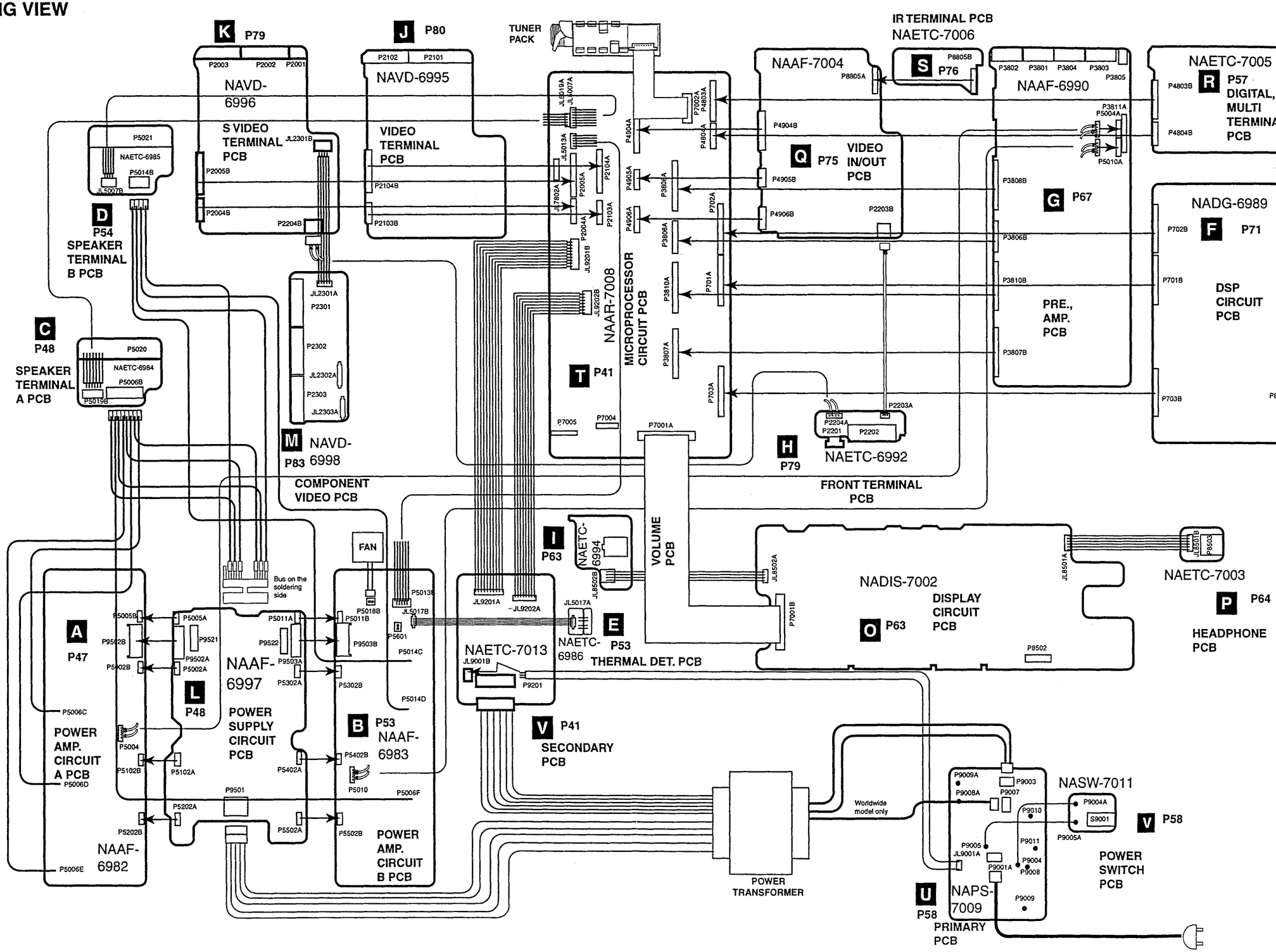
REF. NO.	PART NO.		DESCRIPTION
T9001	2301483	⚠	NPT-1404D,Power transformer <D>
	2301484	⚠	NPT-1404P,Power transformer <P/A>
	2301486	⚠	NPT-1404DG,Power transformer <WT/GT/R>
U1	1A884582-1A		NAAF-6982-1A,Power amplifier circuit A PC board ass'y <D>
	1A884582-1B		NAAF-6982-1B,Power amplifier circuit A PC board ass'y <P/WT/GT/R/A>
U2	1A884583-1A		NAAF-6983-1A,Power amplifier circuit B PC board ass'y <D>
	1A884583-1B		NAAF-6983-1B,Power amplifier circuit B PC board ass'y <P/WT/GT/R/A>
U3	1A884584-1A		NAETC-6984-1A,Speaker terminal A PC board ass'y <D>
	1A884584-1B		NAETC-6984-1B,Speaker terminal A PC board ass'y <P/WT/GT/R/A>
U4	1A884585-1A		NAETC-6985-1A,Speaker terminal B PC board ass'y <D> <P/WT/GT/R/A>
	1A884585-1B		NAETC-6985-1B,Speaker terminal B PC board ass'y <P/WT/GT/R/A>
U5	1A884586-1A		NAETC-6986-1A,Thermal detector PC board ass'y <D>
	1A884586-1B		NAETC-6986-1B,Thermal detector PC board ass'y <P/WT/GT/R/A>
U11	1A884589-1A		NADG-6989-1A,DSP circuit PC board ass'y <D>
	1A884589-1B		NADG-6989-1B,DSP circuit PC board ass'y <P>
	1A884589-1C		NADG-6989-1C,DSP circuit PC board ass'y <WT/GT/R/A>
U12	1A884590-1A		NAAF-6990-1A,Preamplifier PC board ass'y <D>
	1A884590-1B		NAAF-6990-1B,Preamplifier PC board ass'y <P>
	1A884590-1C		NAAF-6990-1C,Preamplifier PC board ass'y <WT/GT/R/A>
U21	1A884595-1A		NAVD-6995-1A,Video terminal PC board ass'y <D>
	1A884595-1B		NAVD-6995-1B,Video terminal PC board ass'y <P/WT/GT/R/A>
U22	1A884596-1A		NAVD-6996-1A,S video terminal PC board ass'y <D>
	1A884596-1B		NAVD-6996-1B,S video terminal PC board ass'y <P/WT/GT/R/A>
U23	1A884597-1A		NAAF-6997-1A, Power supply circuit PC board ass'y <D>
	1A884597-1B		NAAF-6997-1B, Power supply circuit PC board ass'y <P/WT/GT/R/A>
U24	1A884598-1A		NAVD-6998-1A, Component video terminal PC board ass'y <D>
	1A884598-1B		NAVD-6998-1B, Component video terminal PC board ass'y <P/WT/GT/R/A>
U25	1A884501-1A		NAETC-7001-1A, Bridge diode PC board ass'y <D>
	1A884501-1B		NAETC-7001-1B, Bridge diode PC board ass'y <P/WT/GT/R/A>
U28	1A884504-1A		NAAF-7004-1A,Video input/output terminal PC board ass'y <D>
	1A884504-1B		NAAF-7004-1B,Video input/output terminal PC board ass'y <P>
	1A884504-1C		NAAF-7004-1C,Video input/output terminal PC board ass'y <GT/A>
	1A884504-1D		NAAF-7004-1D,Video input/output terminal PC board ass'y <WT/R>
U29	1A884505-1A		NAETC-7005-1A,Digital and multi-channel terminal PC board ass'y <D>
	1A884505-1B		NAETC-7005-1B,Digital and multi-channel terminal PC board ass'y <P>
	1A884505-1C		NAETC-7005-1C,Digital and multi-channel terminal PC board ass'y <GT/A>
	1A884505-1D		NAETC-7005-1D,Digital and multi-channel terminal PC board ass'y <WT/R>
U30	1A884506-1A		NAETC-7006-1A,IR terminal PC board ass'y <D>
	1A884506-1B		NAETC-7006-1B,IR terminal PC board ass'y <P>
	1A884506-1C		NAETC-7006-1C,IR terminal PC board ass'y <GT/A>
	1A884506-1D		NAETC-7006-1D,IR terminal PC board ass'y <WT/R>
U31	1A884508-1A		NAAR-7008-1A,Microprocessor circuit PC board ass'y <D>
	1A884508-1B		NAAR-7008-1B,Microprocessor circuit PC board ass'y <P>
	1A884508-1D		NAAR-7008-1D,Microprocessor circuit PC board ass'y <WT>
	1A884508-1E		NAAR-7008-1E,Microprocessor circuit PC board ass'y <R>
	1A884508-1F		NAAR-7008-1F,Microprocessor circuit PC board ass'y <GT>
	1A884508-1I		NAAR-7008-1I,Microprocessor circuit PC board ass'y <A>
U32	1A884509-1A		NAPS-7009-1A,Primary circuit PC board ass'y <D>
	1A884509-1B		NAPS-7009-1B,Primary circuit PC board ass'y <P>
	1A884509-1D		NAPS-7009-1D,Primary circuit PC board ass'y <WT>
	1A884509-1E		NAPS-7009-1E,Primary circuit PC board ass'y <R>
	1A884509-1F		NAPS-7009-1F,Primary circuit PC board ass'y <GT>
	1A884509-1I		NAPS-7009-1I,Primary circuit PC board ass'y <A>
U35	1A884513-1A		NAETC-7013-1A, Secondary circuit PC board ass'y <D>
	1A884513-1B		NAETC-7013-1B, Secondary circuit PC board ass'y <P>
	1A884513-1D		NAETC-7013-1D, Secondary circuit PC board ass'y <WT>
	1A884513-1E		NAETC-7013-1E, Secondary circuit PC board ass'y <R>
	1A884513-1F		NAETC-7013-1F, Secondary circuit PC board ass'y <GT>
	1A884513-1I		NAETC-7013-1I, Secondary circuit PC board ass'y <A>
U36	240134 or		TFCE1U114A or
	240138A		ENG06501Q,Tuner unit <D>
	240135 or		TFCE1E512A or
	240139A		ENG07501Q,Tuner unit <P/WT/GT/R/A>

CHASSIS SECTION

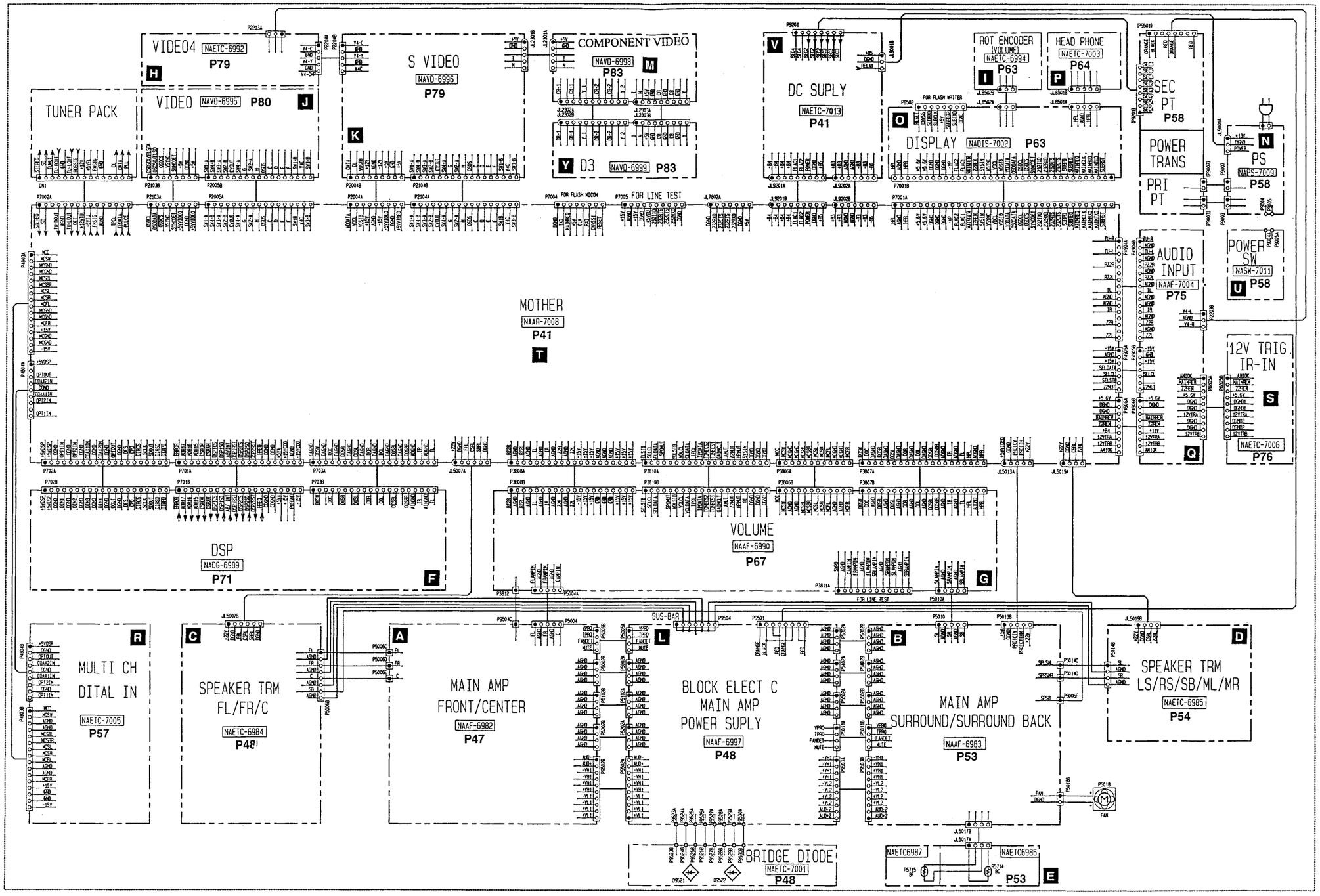


NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

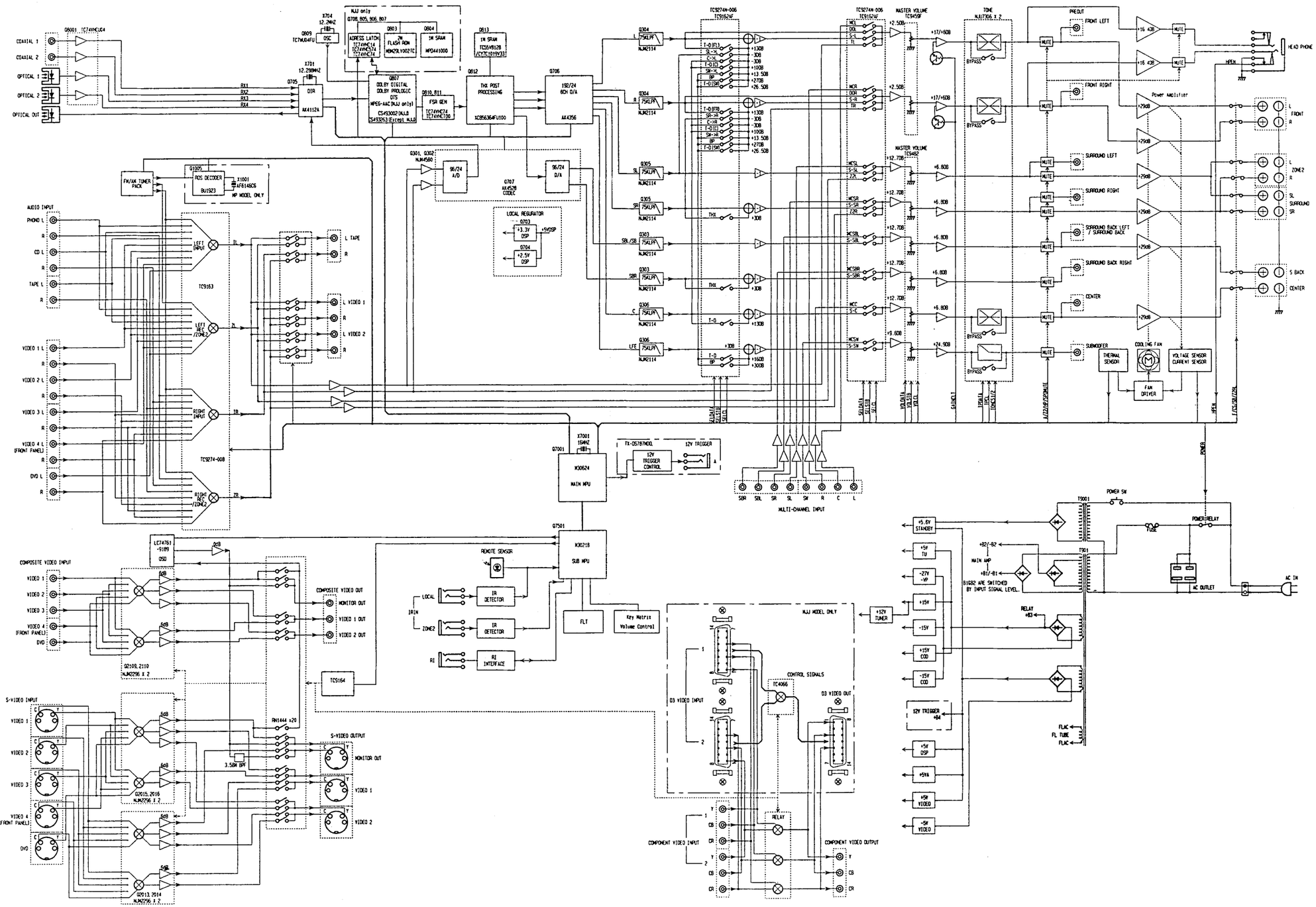
WIRING VIEW


K P79
NAVD-6996
S VIDEO TERMINAL PCB
J P80
NAVD-6995
VIDEO TERMINAL PCB
TUNER PACK
IR TERMINAL PCB
NAETC-7006
NAAF-7004
S P76
NAAF-6990
NAETC-7005
R P57
DIGITAL, MULTI TERMINAL PCB
Q P75
VIDEO IN/OUT PCB
G P67
NADG-6989
F P71
DSP CIRCUIT PCB
PRE., AMP. PCB
NAAR-7008
MICROPROCESSOR CIRCUIT PCB
T P41
D P54
SPEAKER TERMINAL B PCB
C P48
SPEAKER TERMINAL A PCB
M NAVD-6998 P83
COMPONENT VIDEO PCB
H P79
NAETC-6992
FRONT TERMINAL PCB
I P63
NAETC-6994
VOLUME PCB
NADIS-7002
O P63
DISPLAY CIRCUIT PCB
NAETC-7003
P P64
HEADPHONE PCB
A P47
POWER AMP. CIRCUIT A PCB
NAAF-6982
L P48
NAAF-6997
POWER SUPPLY CIRCUIT PCB
B P53
NAAF-6983
POWER AMP. CIRCUIT B PCB
NAETC-7013
E P53
NAETC-6986
THERMAL DET. PCB
V P41
SECONDARY PCB
POWER TRANSFORMER
Worldwide model only
NASW-7011
V P58
POWER SWITCH PCB
U P58
NAPS-7009
PRIMARY PCB
FAN
Bus on the soldering side

TERMINAL CONNECTION VIEW



BLOCK DIAGRAM



COMPONET SIDE
MICROPROCESSOR CIRCUIT PC BOARD

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C9208	354761029	1000 μF,35V,Elect.
C9211	354781019	100 μF,50V,Elect.
C9212	354771019	100 μF,63V,Elect.
	Resistors	
R9201,R9203	452530224	2.2Ω ±5%,1/2W,Metal
R9202	452532294	0.22Ω ±5%,1/2W,Metal
R9204	442625604	56Ω ±5%,1W,Metal oxide
	Labels	
F9201A,F9202A	29361747	T2.5AL250V <P/GT/WT/R/A>
	Fuses	
F9201,F9202	252160	⚠ 2.5A-UL/T-237 <D>
	252241 or	⚠ 2.5A-SE-TL250V or
	252075	⚠ 2.5A-SE-EAK <P/A/R/WT/GT>
	Fuse holders	
F9211-F9214	25052133	⚠ NSCT-1P2031

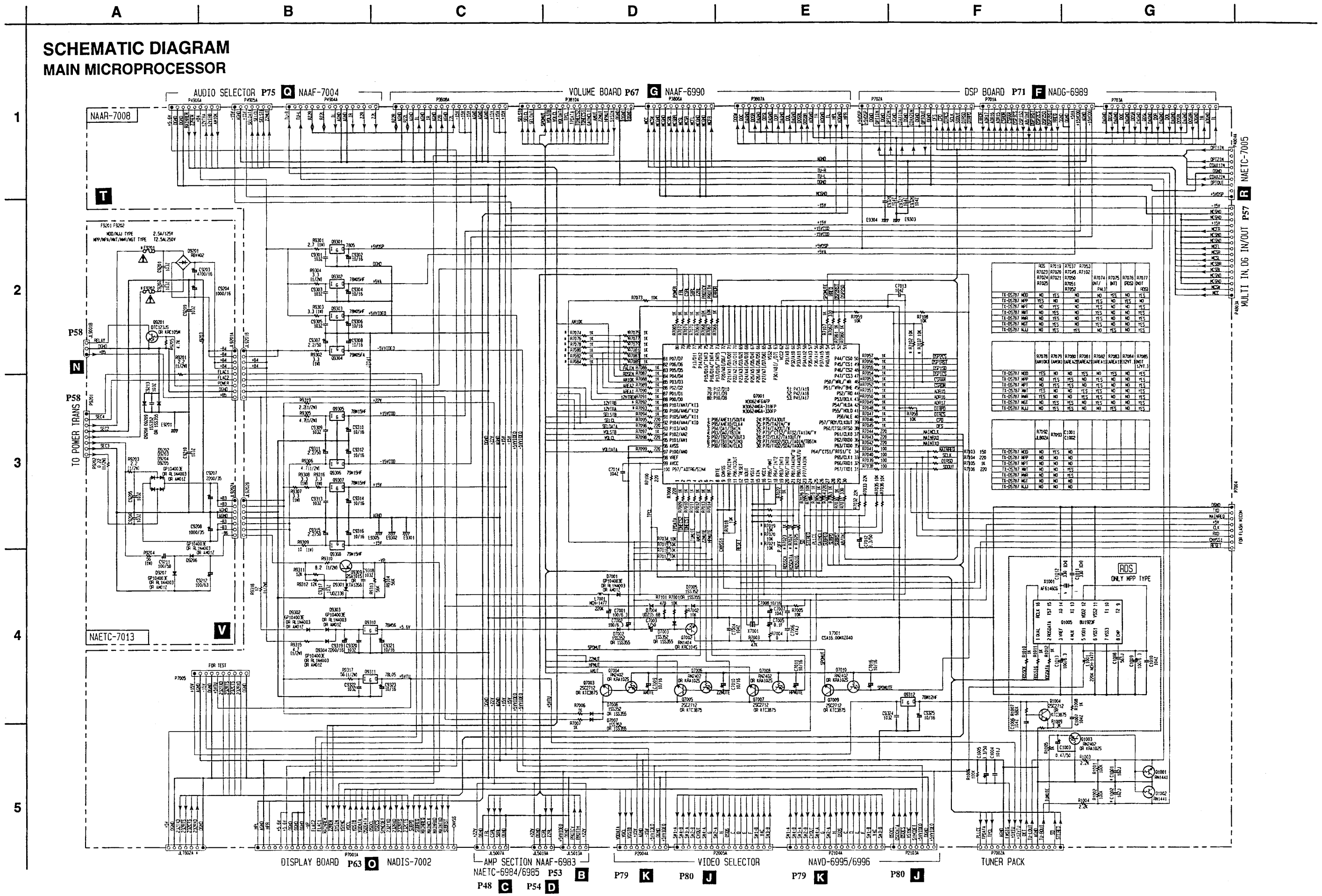
CIRCUIT NO.	PART NO.	DESCRIPTION
	Sockets	
JL9001B	25050267	NSCT-3P95
JL9201A	25051113	NSCT-9P900
JL9202A	25051111	NSCT-7P898
	Plug	
P9201	25055171	NPLG-8P155

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

TX-DS787

SCHEMATIC DIAGRAM

MAIN MICROPROCESSOR



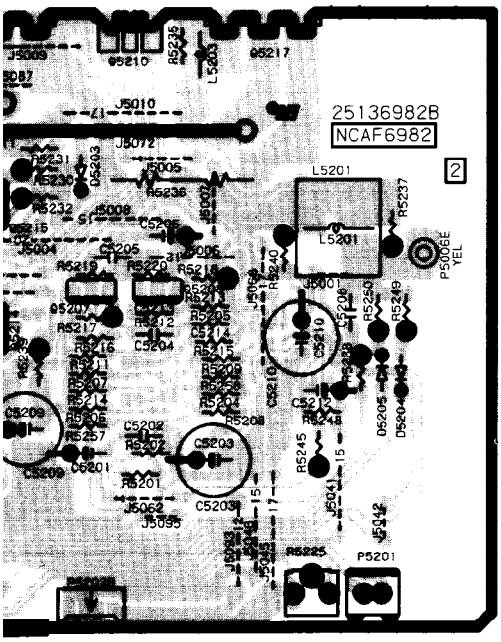
MICROPROCESSOR CIRCUIT PC BOARD (NAAR-7008-1A/1B/1D/1E/1F/1I)		
CIRCUIT NO.	**PART NO.**	**DESCRIPTION**
	ICs	
Q1005	22241297R2	BU1923F <P>
Q7001	22241568	M30624MGA-330FP
Q9301	222780054NEC or	MPC7805HF or
	222780054JRC	NJM7805FA
Q9302,Q9303	222780055NEC,	MPC78M05HF,
	222780055JRC or	NJM78M05FA or
	222780055MIT	M5F78M05L
Q9304	222790055JRC or	NJM79M05FA or
	222790055MIT	M5F79M05L
Q9305,Q9307	222780155MIT,	M5F78M15L,
	222780155JRC or	NJM78M15FA or
	222780155NEC	MPC78M15HF
Q9306,Q9308	222790155MIT or	M5F79M15L or
	222790155JRC	NJM79M15FA
Q9310	222780565JRC	NJM78M56FA
Q9311	222780053JRC	NJM78L05A
Q9312	222780125JRC or	NJM78M12FA or
	222780125MIT	M5F78M12L
	Transistors	
Q1001,Q1002	2215410R2	RN1441
Q1003	2214530R2 or	RN2402 or
	2216220R2	KRA102S
Q1004	2213145R2,	2SC2712-GR,
	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2216173R2,	KTC3875-O,
	2216174R2 or	KTC3875-Y or
	2216175R2	KTC3875-GR <P>
Q7002	2214490R2 or	RN1404 or
	2216210R2	KRC104S
Q7003,Q7005	2213145R2,	2SC2712-GR,
Q7007,Q7009	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2216173R2,	KTC3875-O,
	2216174R2 or	KTC3875-Y or
	2216175R2	KTC3875-GR
Q7004,Q7006	2214530R2 or	RN2402 or
Q7008,Q7010	2216220R2	KRA102S
Q9309	2211455 or	2SA1015-GR or
	2215975	KTA1266-GR
	Diodes	
D7001	22380260,	RL1N4003,
D9302-D9304	22380032 or	1SR139-100 or
	22380035	GP104003E
D7002,D7003	223234R2 or	1SS352 or
D7005-D7007	223233R1	1SS355
D7004	224550560R2 or	UDZS5.6B or
	224490560R2	UDZS.6B
D9301	224493300R2	UDZ33B
	Coils	
L1001	231237K220R2	NCH-1477 <P>
L7001	231237K220R2	NCH-1477
	Oscillators	
X1001	3010203	AF6146CG,Crystal <P>
X7001	3010322	CST16.00MXW0C1,Ceramic
	Capacitors	
C1001,C1002	374721824	1800pF±5%,50V,Plastic <WT/R>
C1003	354784799	0.47 μ F,50V,Elect.
C1005	354780339	3.3 μ F,50V,Elect.

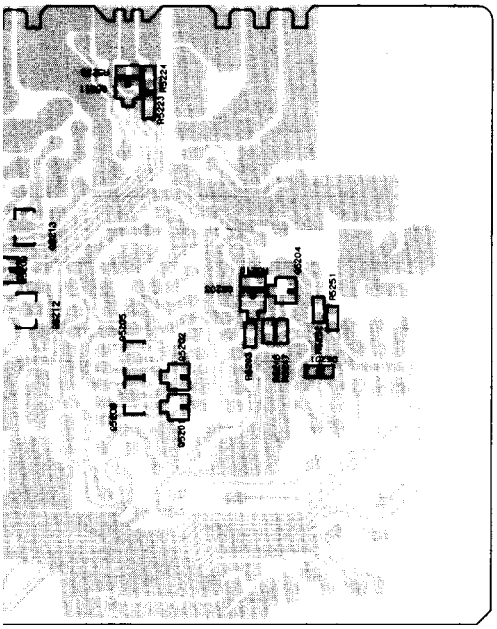
CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C1008	374725614	560pF±5%,50V,Plastic <P>
C1009,C1013	354721019	100 μ F,6.3V,Elect. <P>
C7001,C7002	354721019	100 μ F,6.3V,Elect.
C7003	354780109	1 μ F,50V,Elect.
C7005	3000078 or	DX-5R5L104 or
	3000118	EECS5RST104S
C7006	375524744	0.47 μ F±5%,50V,Plastic
C7008-C7011	354741009	10 μ F,16V,Elect.
C7012	354780339	3.3 μ F,50V,Elect.
C7016,C9302	354741009	10 μ F,16V,Elect.
C9304,C9306	354741009	10 μ F,16V,Elect.
C9307,C9311	354780229	2.2 μ F,50V,Elect.
C9308,C9310	354741009	10 μ F,16V,Elect.
C9312,C9314	354741009	10 μ F,16V,Elect.
C9315	354780229	2.2 μ F,50V,Elect.
C9316,C9321	354741009	10 μ F,16V,Elect.
C9319	3547422295	2200 μ F,16V,Elect.
C9323,C9325	354741009	10 μ F,16V,Elect.
	Resistors	
R7101	443524714	470Ω ±5%,1/2W,Metal oxide
R9301	452630274	2.7Ω ±5%,1W,Metal
R9302-R9304	452630334	3.3Ω ±5%,1W,Metal
R9305,R9306	452530474	4.7Ω ±5%,1/2W,Metal
R9307,R9308	452630334	3.3Ω ±5%,1W,Metal
R9309	442621004	10Ω ±5%,1W,Metal oxide
R9310	452530824	8.2Ω ±5%,1/2W,Metal
R9315	452530474	4.7Ω ±5%,1/2W,Metal
R9316	452630334	3.3Ω ±5%,1W,Metal
R9317	443525604	56Ω ±5%,1/2W,Metal oxide
R9318	442521204F	12Ω ±5%,1/2W,Metal
R9319	453530224	2.2Ω ±5%,1/2W,Metal
	Sockets	
JL5007A	25051110	NSCT-6P897
JL5013A	25051109	NSCT-5P896
JL5019A	25051108	NSCT-4P895
JL9201B	25050273	NSCT-9P101
JL9202B	25050271	NSCT-7P99
P7001A	25052231 or	NSCT-35P2128 or
	25052044	NSCT-35P1831
P7002A	25052211,	NSCT-15P2108,
	25051822 or	NSCT-15P1609 or
	25052024	NSCT-15P1811
	Plugs	
P2103A	25055704	NPLG-8P660
P2104A	25055806	NPLG-17P762
P3806A	25055708	NPLG-12P664
P3807A,P3808A	25055712	NPLG-20P668
P3810A	25055712	NPLG-20P668
P4803A,P4904A	25055805	NPLG-16P761
P4804A,P4906A	25055705	NPLG-9P661
P4905A	25055703	NPLG-7P659
P7004	25055704	NPLG-8P660
P7005	25055706	NPLG-10P662
P701A-P703A	25055712	NPLG-20P668
	Heatsinks	
Q9301A,Q9303A	27160391	
Q9302A	27160211	RAD-68
Q9307A	27160391	
	Screws	
Q9301B,Q9302B	82143010	3P+10FN(BC),Pan head

MICROPROCESSOR CIRCUIT PC BOARD (NAAR-7008-1A/1B/1D/1E/1F/1I)

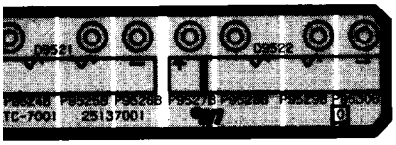
CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q1005	22241297R2	BU1923F <P>
Q7001	22241568	M30624MGA-330FP
Q9301	222780054NEC or	MPC7805HF or
	222780054JRC	NJM7805FA
Q9302,Q9303	222780055NEC,	MPC78M05HF,
	222780055JRC or	NJM78M05FA or
	222780055MIT	M5F78M05L
Q9304	222790055JRC or	NJM79M05FA or
	222790055MIT	M5F79M05L
Q9305,Q9307	222780155MIT,	M5F78M15L,
	222780155JRC or	NJM78M15FA or
	222780155NEC	MPC78M15HF
Q9306,Q9308	222790155MIT or	M5F79M15L or
	222790155JRC	NJM79M15FA
Q9310	222780565JRC	NJM78M56FA
Q9311	222780053JRC	NJM78L05A
Q9312	222780125JRC or	NJM78M12FA or
	222780125MIT	M5F78M12L
	Transistors	
Q1001,Q1002	2215410R2	RN1441
Q1003	2214530R2 or	RN2402 or
	2216220R2	KRA102S
Q1004	2213145R2,	2SC2712-GR,
	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2216173R2,	KTC3875-O,
	2216174R2 or	KTC3875-Y or
	2216175R2	KTC3875-GR <P>
Q7002	2214490R2 or	RN1404 or
	2216210R2	KRC104S
Q7003,Q7005	2213145R2,	2SC2712-GR,
Q7007,Q7009	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2216173R2,	KTC3875-O,
	2216174R2 or	KTC3875-Y or
	2216175R2	KTC3875-GR
Q7004,Q7006	2214530R2 or	RN2402 or
Q7008,Q7010	2216220R2	KRA102S
Q9309	2211455 or	2SA1015-GR or
	2215975	KTA1266-GR
	Diodes	
D7001	22380260,	RL1N4003,
D9302-D9304	22380032 or	1SR139-100 or
	22380035	GP104003E
D7002,D7003	223234R2 or	1SS352 or
D7005-D7007	223233R1	1SS355
D7004	224550560R2 or	UDZS5.6B or
	224490560R2	UDZ5.6B
D9301	224493300R2	UDZ33B
	Coils	
L1001	231237K220R2	NCH-1477 <P>
L7001	231237K220R2	NCH-1477
	Oscillators	
X1001	3010203	AF6146CG,Crystal <P>
X7001	3010322	CST16.00MXW0C1,Ceramic
	Capacitors	
C1001,C1002	374721824	1800pF±5%,50V,Plastic <WT/R>
C1003	354784799	0.47μF,50V,Elect.
C1005	354780339	3.3μF,50V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C1008	374725614	560pF±5%,50V,Plastic <P>
C1009,C1013	354721019	100μF,6.3V,Elect. <P>
C7001,C7002	354721019	100μF,6.3V,Elect.
C7003	354780109	1μF,50V,Elect.
C7005	3000078 or	DX-5R5L104 or
	3000118	EECS5R5T104S
C7006	375524744	0.47μF±5%,50V,Plastic
C7008-C7011	354741009	10μF,16V,Elect.
C7012	354780339	3.3μF,50V,Elect.
C7016,C9302	354741009	10μF,16V,Elect.
C9304,C9306	354741009	10μF,16V,Elect.
C9307,C9311	354780229	2.2μF,50V,Elect.
C9308,C9310	354741009	10μF,16V,Elect.
C9312,C9314	354741009	10μF,16V,Elect.
C9315	354780229	2.2μF,50V,Elect.
C9316,C9321	354741009	10μF,16V,Elect.
C9319	354742229S	2200μF,16V,Elect.
C9323,C9325	354741009	10μF,16V,Elect.
	Resistors	
R7101	443524714	470Ω±5%,1/2W,Metal oxide
R9301	452630274	2.7Ω±5%,1W,Metal
R9302-R9304	452630334	3.3Ω±5%,1W,Metal
R9305,R9306	452530474	4.7Ω±5%,1/2W,Metal
R9307,R9308	452630334	3.3Ω±5%,1W,Metal
R9309	442621004	10Ω±5%,1W,Metal oxide
R9310	452530824	8.2Ω±5%,1/2W,Metal
R9315	452530474	4.7Ω±5%,1/2W,Metal
R9316	452630334	3.3Ω±5%,1W,Metal
R9317	443525604	56Ω±5%,1/2W,Metal oxide
R9318	442521204F	12Ω±5%,1/2W,Metal oxide
R9319	453530224	2.2Ω±5%,1/2W,Metal
	Sockets	
JL5007A	25051110	NSCT-6P897
JL5013A	25051109	NSCT-5P896
JL5019A	25051108	NSCT-4P895
JL9201B	25050273	NSCT-9P101
JL9202B	25050271	NSCT-7P99
P7001A	25052231 or	NSCT-35P2128 or
	25052044	NSCT-35P1831
P7002A	25052211,	NSCT-15P2108,
	25051822 or	NSCT-15P1609 or
	25052024	NSCT-15P1811
	Plugs	
P2103A	25055704	NPLG-8P660
P2104A	25055806	NPLG-17P762
P3806A	25055708	NPLG-12P664
P3807A,P3808A	25055712	NPLG-20P668
P3810A	25055712	NPLG-20P668
P4803A,P4904A	25055805	NPLG-16P761
P4804A,P4906A	25055705	NPLG-9P661
P4905A	25055703	NPLG-7P659
P7004	25055704	NPLG-8P660
P7005	25055706	NPLG-10P662
P701A-P703A	25055712	NPLG-20P668
	Heatsinks	
Q9301A,Q9303A	27160391	
Q9302A	27160211	RAD-68
Q9307A	27160391	
	Screws	
Q9301B,Q9302B	82143010	3P+10FN(BC),Pan head





LIFIER CIRCUIT A PC BOARD



IDGE DIODE PC BOARD

PRINTED CIRCUIT BOARD-PARTS LIST

POWER AMPLIFIER CIRCUIT A PC BOARD (NAAF-6982-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q5001,Q5002	2216154R2 or	* 2SC1622A(D18) or
Q5101,Q5102	2216153R2	* 2SC1622A(D17)
Q5003,Q5018	2216156R2,	2SC1622A-L,
Q5103,Q5118	2216295R2 or	KTC3911-GR or
Q5203,Q5218	2216296R2	KTC3911-BL
Q5004,Q5104	2214460R2 or	RN1401 or
Q5204	2216330R2	KRC101S
Q5005,Q5006	2216094R2	2SA1200-Y
Q5007 ,Q5107	2202094	2SA1360-Y
Q5008,Q5108	2202104	2SC3423-Y
Q5009,Q5109	2213145R2 or	2SC2712-GR or
Q5209	2216175R2	KTC3875-GR
Q5010,Q5110	2212654 or	2SC3421-Y or
Q5210	2212653	2SC3421-O
Q5016,Q5116	2202822 or	* 2SC5200-R or
Q5216	2202823	* 2SC5200-O
Q5017,Q5117	2202812 or	* 2SA1943-R or
Q5217	2202813	* 2SA1943-O
Q5011,Q5111	2214375R2 or	2SA1162-GR or
Q5211	2216185R2	KTA1504-GR
Q5012,Q5112	2215313R1	2SC3515-O
Q5013,Q5113	2216113R2	2SA1384-O
Q5014,Q5114	2203000	2SA1930
Q5015,Q5115	2203010	2SC5171
Q5105,Q5106	2216094R2	2SA1200-Y
Q5201,Q5202	2216154R2 or	* 2SC1622A(D18) or
	2216153R2	* 2SC1622A(D17)
Q5205,Q5206	2216094R2	2SA1200-Y
Q5207	2202094	2SA1360-Y
Q5208	2202104	2SC3423-Y
Q5212	2215313R1	2SC3515-O
Q5213	2216113R2	2SA1384-O
Q5214	2203000	2SA1930
Q5215	2203010	2SC5171
	Diodes	
D5001,D5101	224490560R2	UDZ5.6B
D5002-D5005	223163 or	1SS133 or
D5102-D5105	223205	1SS270A
D5201	224490560R2	UDZ5.6B
D5202-D5205	223163 or	1SS133 or
	223205	1SS270A
	Coils	
L5001,L5101	231176SY	S-1.3C
L5002,L5003	5597-45502	
L5102,L5103	5597-45502	
L5201	231176SY	S-1.3C
L5202,L5203	5597-45502	
	Capacitors	
C5001,C5101,C5201	354761019	100 μ F,35V,Elect.
C5002,C5102,C5202	374722215	220pF±10%,50V,Plastic
C5003,C5103,C5203	354762219	220 μ F,35V,Elect.
C5005,C5105,C5205	374721015	100pF±10%,50V,Plastic
C5006,C5007	354781009	10 μ F,50V,Elect.
C5008,C5108,C5208	374721044	0.1 μ F±5%,50V,Plastic
C5009,C5010	3500201	220 μ F,63V,Elect.
C5011,C5111	354783399	0.33 μ F,50V,Elect.
C5012,C5112	354781009	10 μ F,50V,Elect.
C5013,C5014	374723344	0.33 μ F±5%,50V,Plastic
C5106,C5107	354781009	10 μ F,50V,Elect.
C5109,C5110	3500201	220 μ F,63V,Elect.
C5113,C5114	374723344	0.33 μ F±5%,50V,Plastic
C5206,C5207	354781009	10 μ F,50V,Elect.
C5209,C5210	3500201	220 μ F,63V,Elect.
C5211	354783399	0.33 μ F,50V,Elect.
C5212	354781009	10 μ F,50V,Elect.
C5213,C5214	374723344	0.33 μ F±5%,50V,Plastic

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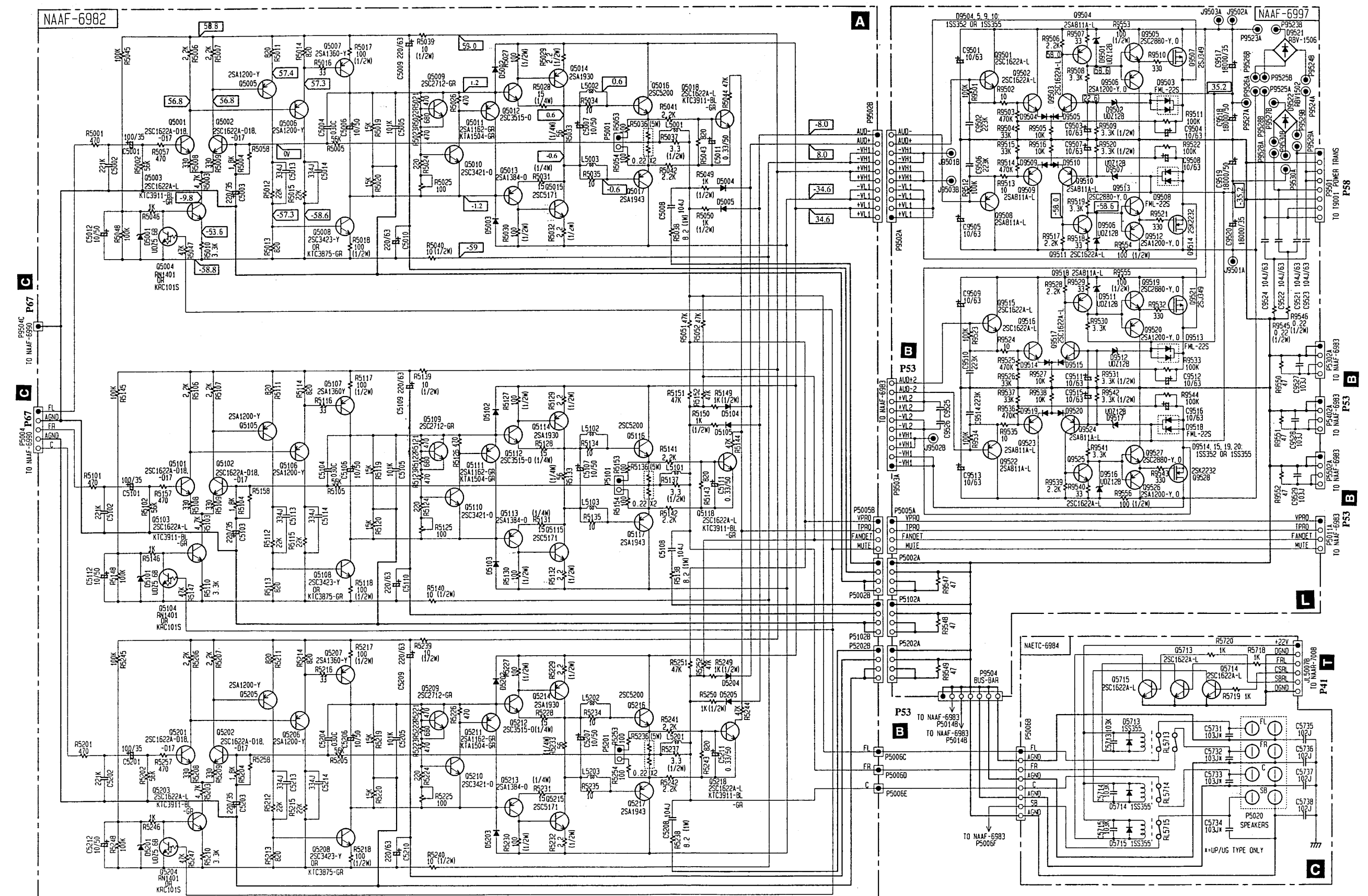
SCHEMATIC DIAGRAM
POWER AMPLIFIER SECTION A



CAUTION: Replacement for transistor of mark *, if necessary must be made from the same bata group (HFE) as the original type.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistors	
R5017,R5018	443521014	100Ω±5%,1/2W,Metal oxide
R5025,R5125	5210280	N06HR100BE,Trimming
R5027,R5030	443521014	100Ω±5%,1/2W,Metal oxide
R5028,R5031	415471504	15Ω±5%,1/4W,Carbon
R5029,R5032	453530224	2.2Ω±5%,1/2W,Metal
R5033,R5133	415475604	56Ω±5%,1/4W,Carbon
R5036,R5136	4500031,	MPC722-5WK-0.22,
R5236	4000201 or	RF-5EGKR22 or
	4500245	BPR55FK0.22,Metal plate
R5037,R5137	453530334	3.3Ω±5%,1/2W,Metal
R5038,R5138	453630824	8.2Ω±5%,1W,Metal
R5039,R5040	443521004	10Ω±5%,1/2W,Metal oxide
R5049,R5050	443521024	1kΩ±5%,1/2W,Metal oxide
R5117,R5118	443521014	100Ω±5%,1/2W,Metal oxide
R5127,R5130	443521014	100Ω±5%,1/2W,Metal oxide
R5128,R5131	415471504	15Ω±5%,1/4W,Carbon
R5129,R5132	453530224	2.2Ω±5%,1/2W,Metal
R5139,R5140	443521004	10Ω±5%,1/2W,Metal oxide
R5149,R5150	443521024	1kΩ±5%,1/2W,Metal oxide
R5217,R5218	443521014	100Ω±5%,1/2W,Metal oxide
R5225	5210280	N06HR100BE,Trimming
R5227,R5230	443521014	100Ω±5%,1/2W,Metal oxide
R5228,R5231	415471504	15Ω±5%,1/4W,Carbon
R5229,R5232	453530224	2.2Ω±5%,1/2W,Metal
R5233	415475604	56Ω±5%,1/4W,Carbon
R5237	453530334	3.3Ω±5%,1/2W,Metal
R5238	453630824	8.2Ω±5%,1W,Metal
R5239,R5240	443521004	10Ω±5%,1/2W,Metal oxide
R5249,R5250	443521024	1kΩ±5%,1/2W,Metal oxide
	Plugs	
P5001,P5101	25055689	NPLG-2P645
P5201	25055689	NPLG-2P645
P5902B	25056036	NPLG-10P986
	Sockets	
P5002B,P5005B	25051526	NSCT-4P1313
P5102B,P5202B	25051526	NSCT-4P1313
P5004	2009990652UL	NSAS-10P0907
	Bus bars	
P9511-P9515	27141774	BBL75
	Heatsinks	
Q5014A	27160475	(DR)144
Q5114A,Q5214A	27160470	(DR)139.
	Screws	
Q5014B,Q5015B	838430107	3TTB+10S(BC),Self-tapping
Q5114B,Q5115B	838430107	3TTB+10S(BC),Self-tapping
Q5214B,Q5215B	838430107	3TTB+10S(BC),Self-tapping

SPEAKER TERMINAL A PC BOARD (NAETC-6984-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q5713-Q5715	2216156R2,	2SC1622A-L,
	2216295R2 or	KTC3911-GR or
	2216296R2	KTC3911-BL
	Diodes	
D5713-D5715	223233R1	1SS355
	Capacitors	
C5731-C5734	374721034	0.01μF±5%,50V,Plastic <P/GT/WT/R/A>
C5735-C5738	374721024	1000pF±5%,50V,Plastic
	Relays	
RL5713	25065563 or	NRL-2P5A-DC24-129 or
	25065586	NRL-2P5A-DC24-142
RL5714,RL5715	25065574	NRL-1P5A-DC24-134
	Terminal	
P5020	25060296	NTM-8PDMN227
	Sockets	
JL5007B	25050270	NSCT-6P98
P5006	2009990627A	NSAS-8P0858
P5006B	25055171	NPLG-8P155
	Tape	
RL5713A	29110083	Cloth

POWER SUPPLY CIRCUIT PC BOARD (NAAF-6997-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q9501-Q9503	2216156R2	2SC1622A-L
Q9504,Q9518	2216166R2	2SA811A-L
Q9505,Q9513	2216104R2	2SC2880-Y
Q9506,Q9512	2216094R2	2SA1200-Y
Q9507,Q9521	2203530	2SJ349
Q9508-Q9510	2216166R2	2SA811A-L
Q9511,Q9525	2216156R2	2SC1622A-L
Q9514,Q9528	2203540	2SK2232
Q9515-Q9517	2216156R2	2SC1622A-L
Q9519,Q9527	2216104R2	2SC2880-Y
Q9520,Q9526	2216094R2	2SA1200-Y
Q9522-Q9524	2216166R2	2SA811A-L
	Diodes	
D9501,D9502	224491200R2	UDZ12B
D9503,D9508	22380307 or	FML-22S or
D9513,D9518	22380306	D10LC20U
D9504,D9505	223234R2 or	1SS352 or
D9509,D9510	223233R1	1SS355
D9506,D9507	224491200R2	UDZ12B
D9511,D9512	224491200R2	UDZ12B
D9514,D9515	223234R2 or	1SS352 or
D9519,D9520	223233R1	1SS355
D9516,D9517	224491200R2	UDZ12B
	Capacitors	
C9501	354771009	10μF,63V,Elect.
C9503-C9509	354771009	10μF,63V,Elect.
C9511-C9513	354771009	10μF,63V,Elect.
C9515,C9516	354771009	10μF,63V,Elect.
C9517,C9520	3504360	18000μF,35V,Elect.
C9518,C9519	3504359	18000μF,50V,Elect.
C9521-C9524	374791044	0.1μF±5%,63V,Plastic
C9525-C9529	374721034	0.01μF±5%,50V,Plastic
	Resistors	
R9509,R9520	443523324	3.3kΩ±5%,1/2W,Metal oxide
R9531,R9542	443523324	3.3kΩ±5%,1/2W,Metal oxide
R9545,R9546	453532294	0.22Ω±5%,1/2W,Metal
R9553,R9554	443521014	100Ω±5%,1/2W,Metal oxide
R9555,R9556	443521014	100Ω±5%,1/2W,Metal oxide
	Plugs	
P5002A,P5005A	25055804	NPLG-4P760
P5011A,P5102A	25055804	NPLG-4P760
P5202A,P5302A	25055804	NPLG-4P760
P5402A,P5502A	25055804	NPLG-4P760
P9501	25056029	NPLG-8P979
	Sockets	
P9502A,P9503A	25052559	NSCT-10P2456
	Bus bars	
P9511	27141772	BBL15
P9516	27141773	BBL40
	Heatsinks	
D9503A,D9508A	27160227	RAD-076
D9513A,D9518A	27160227	RAD-076
	Screws	
D9503B,P9508B	82143010	3P+10FN(BC),Pan head

BRIDGE DIODE PC BOARD (NAETC-7007-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
D9521,D9522	22380044	RBV-1506,Diode

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same data group (HFE) as the original type.

PRINTED CIRCUIT BOARD-PARTS LIST

POWER AMPLIFIER CIRCUIT B PC BOARD (NAAF-6983-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q5301,Q5302	2216154R2	* 2SC1622A(D18)
Q5303,Q5313	2216156R2,	* 2SC1622A-L,
Q5403,Q5413	2216295R2 or	KTC3911-GR or
Q5503,Q5513	2216296R2	KTC3911-BL
Q5304,Q5404	2214460R2 or	RN1401 or
Q5504	2216330R2	KRC101S
Q5305,Q5405	2202094	2SA1360-Y
Q5306,Q5406	2202104	2SC3423-Y
Q5307,Q5407	2212654 or	2SC3421-Y or
Q5507	2212653	2SC3421-O
Q5308,Q5408	2214375R2 or	2SA1162-GR or
Q5508	2216185R2	KTA1504-GR
Q5309,Q5409	2203010	2SC5171
Q5310,Q5410	2203000	2SA1930
Q5311,Q5411	2202822 or	* 2SC5200-R or
Q5511	2202823	* 2SC5200-O
Q5312,Q5412	2202812 or	* 2SA1943-R or
Q5512	2202813	* 2SA1943-O
Q5314,Q5608	2216166R2,	2SA811A-L,
	2216305R2 or	KTA1517-GR or
	2216306R2	KTA1517-BL
Q5315,Q5415	2216094R2	2SA1200-Y
Q5401,Q5402	2216154R2	2SC1622A(D18)
Q5501,Q5502	2216154R2	2SC1622A(D18)
Q5505	2202094	2SA1360-Y
Q5506	2202104	2SC3423-Y
Q5509	2203010	2SC5171
Q5510	2203000	2SA1930
Q5515	2216094R2	2SA1200-Y
Q5601	2212445	2SK365-GR
Q5602-Q5604	2213145R2 or	2SC2712-GR or
Q5610-Q5612	2216175R2	KTC3875-GR
Q5605,Q5606	2214770R2	DTC144EK
Q5607	2202116 or	2SD2061-F or
	2202115	2SD2061-E
Q5609	2214374R2 or	2SA1162-Y or
	2214375R2	2SA1162-GR
Q5613	2214550R2	RN2404
	Diodes	
D5301,D5401	224490560R2	UDZ5.6B
D5302-D5305	223163 or	1SS133 or
D5402-D5405	223205	1SS270A
D5501	224490560R2	UDZ5.6B
D5502-D5505	223163 or	1SS133 or
	223205	1SS270A
D5601-D5607	223233R1	1SS355
D5608	224491300R2	UDZ13B
D5609,D5610	223233R1	1SS355
	Coils	
L5301,L5401,L5501	231176SY	S-1.3C
	Capacitors	
C5301,C5401,C5501	354761019	100μF,35V,Elect.
C5302,C5402,C5502	374722215	220pF±10%,50V,Plastic
C5303,C5403,C5503	354762219	220μF,35V,Elect.
C5304,C5306	354781009	10μF,50V,Elect.
C5305,C5405,C5505	374721015	100pF±10%,50V,Plastic
C5307,C5407,C5507	374721044	0.1μF±5%,50V,Plastic
C5308,C5309,C5408	3500201	220μF,63V,Elect.
C5310,C5312,C5604	354783399	0.33μF,50V,Elect.
C5311,C5404	354781009	10μF,50V,Elect.
C5406,C5411,C5511	354781009	10μF,50V,Elect.
C5409,C5508,C5509	3500201	220μF,63V,Elect.
C5410,C5510	354783399	0.33μF,50V,Elect.
C5504,C5506	354781009	10μF,50V,Elect.
C5601-C5603	354761019	100μF,35V,Elect.
C5605	354722219	220μF,6.3V,Elect.
C5606	354724709	47μF,6.3V,Elect.
	Resistors	
R5312,R5412,R5512	443523304	33Ω±5%,1/2W,Metal oxide
R5313,R5413,R5513	443521014	100Ω±5%,1/2W,Metal oxide
R5318,R5418,R5518	5210280	N06HR100BE,Trimming
R5320,R5420,R5520	443525604	56Ω±5%,1/2W,Metal oxide
R5321,R5421	4500031,	MPC722-5WK-0.22,
R5521	4000201 or	RF-5EGKR22 or
	4500245	BPR55FK0.22,Metal plate
R5322,R5422,R5522	453530334	3.3Ω±5%,1/2W,Metal
R5324,R5424,R5524	453630824	8.2Ω±5%,1W,Metal
R5325,R5326,R5425	443521004	10Ω±5%,1/2W,Metal oxide
R5335,R5536	443521024	1kΩ±5%,1/2W,Metal oxide
R5346,R5446,R5546	443524714	470Ω±5%,1/2W,Metal oxide
R5347,R5348,R5447	4500171	2.2Ω±5%,1/4W,Metal
R5426,R5525,R5526	443521004	10Ω±5%,1/2W,Metal oxide
R5435,R5436	443521024	1kΩ±5%,1/2W,Metal oxide
R5448,RR47,R5548	4500171	2.2Ω±5%,1/4W,Metal
R5535,R5536	443521024	1kΩ±5%,1/2W,Metal oxide
R5611,R5612	443626814	680Ω±5%,1W,Metal oxide
R5625	453530474	4.7Ω±5%,1/2W,Metal
	Sockets	
P5011B,P5302B	25051526	NSCT-4P1313
P5013B	25050269	NSCT-5P97
P5402B,P5502B	25051526	NSCT-4P1313
P5010	2009990575UL	NSAS-10P0784
JL5017B	25051088	NSCT-4P875
	Plugs	
P5015,P5016	25055689	NPLG-2P645
P5018B	25055099	NPLG-2P83
P5301,P5401,P5501	25055689	NPLG-2P645
P5601	25055038	NPLG-2P29
P9503B	25056036	NPLG-10P986
	Bus bars	
P9516-P9522	27141753	BBL50
	Heatsinks	
Q5309A,Q5409A	27160470	(DR)139.
Q5509A	27160475	(DR)144
	Screws	
Q5309B,Q5310B	838430107	3TTB+10S(BC),Self-tapping
Q5409B,Q5410B	838430107	3TTB+10S(BC),Self-tapping
Q5509B,Q5510B	838430107	3TTB+10S(BC),Self-tapping

SPEAKER TERMINAL B PC BOARD (NAETC-6985-1A/1B)

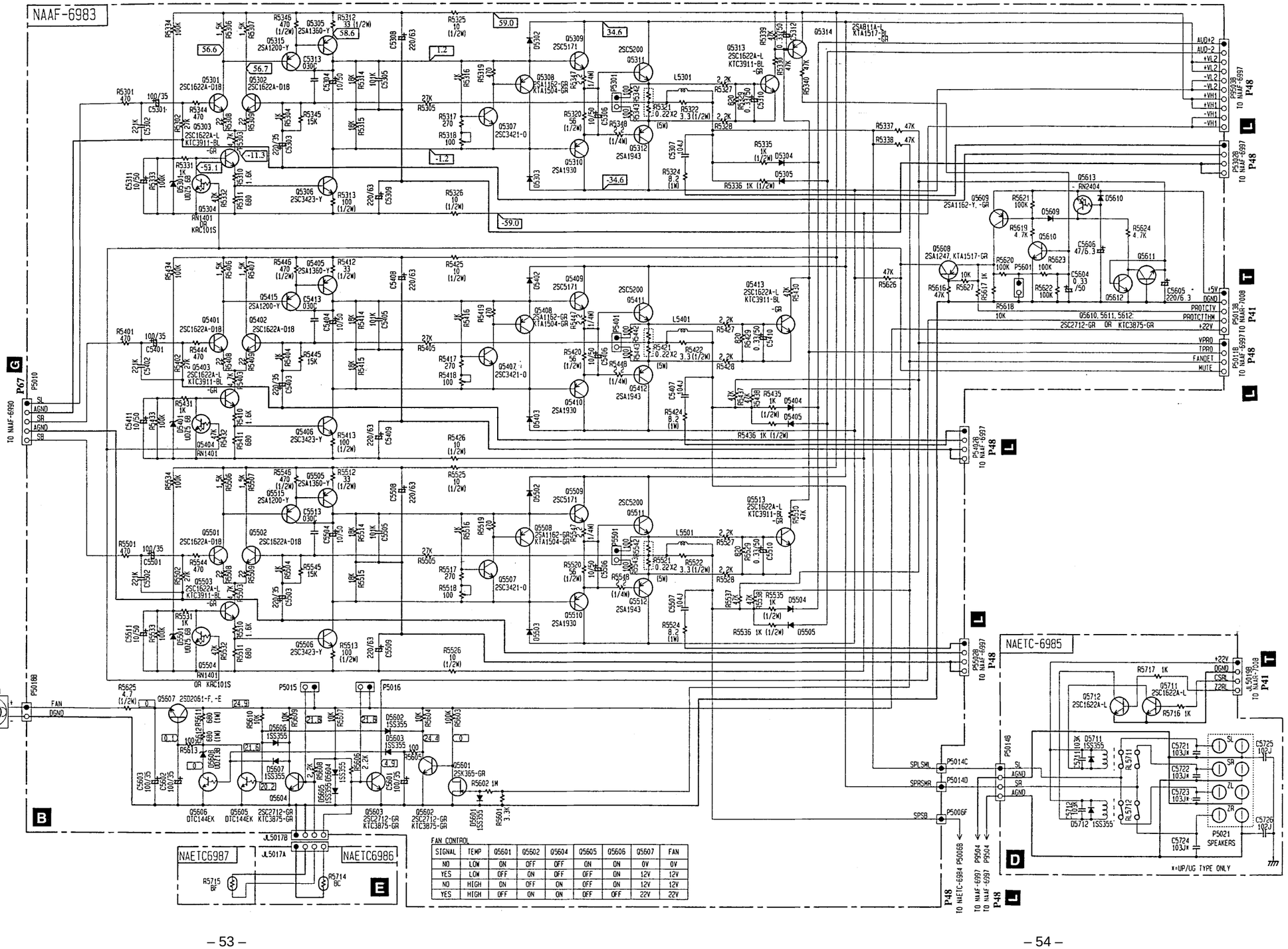
CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q5711,Q5712	2216156R2,	2SC1622A-L,
	2216295R2 or	KTC3911-GR or
	2216296R2	KTC3911-BL
	Diodes	
D5711,D5712	223233R1	1SS355
	Capacitors	
C5721-C5724	374721034	0.01μF±5%,50V,Plastic <P/GT/WT/R/A>
C5725,C5726	374721024	1000pF±5%,50V,Plastic
	Relays	
RL5711,RL5712	25065563 or	NRL-2P5A-DC24-129 or
	25065586	NRL-2P5A-DC24-142
	Terminal	
P5021	25060296	NTM-8PDMN227
	Sockets	
JL5019B	25050268	NSCT-4P96
P5014	2009990628A	NSAS-4P0859
	Plug	
P5014B	25055167	NPLG-4P151

THERMAL DETECTOR PC BOARD (NAETC-6986-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
R5714	4000150	PTH9M04BC222TS2F333,Thermister
R5715	4000153	PTH9M04BF222TS2F333,Thermister
JL5017A	25051088	NSCT-4P875,Socket

SCHEMATIC DIAGRAM

POWER AMPLIFIER SECTION B



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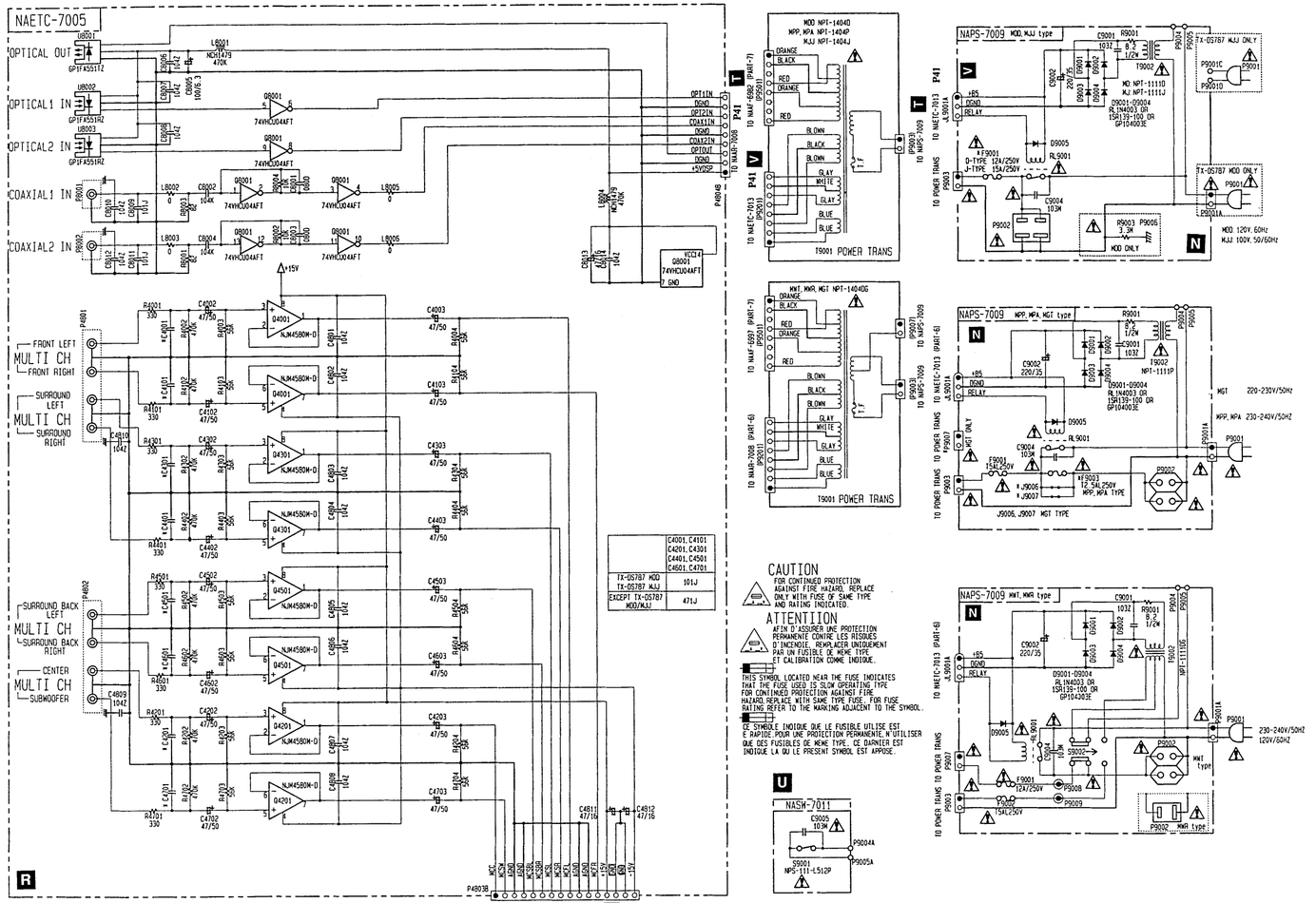
SCHEMATIC DIAGRAM

DIGITAL MULTI, AND POWER SOURCE



DIGITAL AND MULTI-CHANNEL TERMINAL PC BOARD (NAETC-7005-1A/1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q4001,Q4201	22241448R2,	NJM4580M-D,
Q4301,Q4501	22240489R1NE or	MPC4570G2-T1 or
	22241555R2	NJM4580M
Q8001	22274004HR2TO	TC74VHCU04FT
	Photo couplers	
U8001	24120085	GP1FA551TZ
U8002,U8003	24120086	GP1FA551RZ
	Coils	
L8001,L8004	231237K470R2	NCH-1479
	Capacitors	
C4002,C4003	354784709	47 μ F,50V,Elect.
C4102,C4103	354784709	47 μ F,50V,Elect.
C4202,C4203	354784709	47 μ F,50V,Elect.
C4302,C4303	354784709	47 μ F,50V,Elect.
C4402,C4403	354784709	47 μ F,50V,Elect.
C4502,C4503	354784709	47 μ F,50V,Elect.
C4602,C4603	354784709	47 μ F,50V,Elect.
C4702,C4703	354784709	47 μ F,50V,Elect.
C4811,C4812	354741019	100 μ F,16V,Elect.
C8005	354721019	100 μ F,6.3V,Elect.
C8013	354744709	47 μ F,16V,Elect.
	Terminals	
P4801	25045575 or	NPJ-4PDRW389 or
	25045303	NPJ-4PDBL162
P4802	25045586	NPJ-4PDBRW397
P8001,P8002	25045473	NPJ-1PDBL291
	Sockets	
P4803B	25051527	NSCT-16P1314
P4804B	25051234	NSCT-9P1024
	Plug	
P8805A	25055706	NPLG-10P662

PRIMARY CIRCUIT PC BOARD (NAPS-7009-1A/1B/1D/1E/1F/1I)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D9001-D9004	22380260,	RL1N4003,
	22380032 or	1SR139-100 or
	22380035	GP104003E
D9005	223234R2 or	1SS352 or
	223233R1	1SS355
	Capacitors	
C9002	354762219	220 μ F,35V,Elect.
C9004	3500196S	⚠ RE275V-103M,IS
	Fuses	
F9001	252196	⚠ 12A-UL/T-314 <D/WT/WR>
F9002	252244 or	⚠ 5A-SE-TL250V or
	252078	⚠ 5A-SE-EAK <P/WT/WR/GT/A>
F9003	252241 or	⚠ 2.5A-SE-TL250V or
	252075	⚠ 2.5A-SE-EAK <P/A>
	Fuse holders	
F9004,F9005	25052133	⚠ NSCT-1P2031<P/WT/WR/GT/A>
F9006,F9007	25052133	⚠ NSCT-1P2031<P/A>
F9008,F9009	250113	⚠ SN5051<D/WT/WR>
	Socket	
JL9001A	25051107	NSCT-3P894
	Plug	
P9001A	25055675 or	⚠ NPLG-2P631 or
	25056028	⚠ NPLG-2P0978

CIRCUIT NO.	PART NO.	DESCRIPTION
	AC outlet	
P9002	25051125	⚠ NSCT-4P912<P/WT/GT>
	25051126	⚠ NSCT-4P913<D>
	25052115	⚠ NSCT-2P2013 <A>
	25052381	⚠ NSCT-2P2278 <R>
	Plugs	
P9003	25055675 or	⚠ NPLG-2P631 or
	25056028	⚠ NPLG-2P0978
P9007	25055675 or	NPLG-2P631 or
	25056028	NPLG-2P0978 <WT/R/GT>
	Resistors	
R9001	453530824	8.2 Ω ±5%,1/2W,Metal
R9003	431533355	⚠ RC1/2GFKUL-3.3M <D>
	Relay	
RL9001	25065584,	⚠ NRL-1P10A-DC12-140,
	25065516,	⚠ NRL-1P10A-DC12-097,
	25065588 or	⚠ NRL-1P10A-DC12-143 or
	25065248	⚠ NRL-1P15A-DC12-29 <D/WT/R>
RL9001	25065604,	⚠ NRL-1P5A-DC12-153,
	25065583,	⚠ NRL-1P5A-DC12-139,
	25065526 or	⚠ NRL-1P5A-DC12-102 or
	25065515	⚠ NRL-1P5A-DC12-096 <P/GT/A>
	Tape	
RL9001	29110083	Cloth
	Switch	
S9002	25065437	⚠ NSS-22157P <WT/R>
	Power transformer	
T9002	2300670A	⚠ NPT-1111D <D>
T9002	2300671A	⚠ NPT-1111P <P/A>
T9002	2300672A	⚠ NPT-1111DG <WT/R/GT>

POWER SWITCH PC BOARD (NASW-7011-1A/1B/1D/1E/1F/1I)

CIRCUIT NO.	PART NO.	DESCRIPTION
C9005	3500196	⚠ RE275V-103M,IS capacitor
S9001	25035550	⚠ NPS-111-L512P,Power switch

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

Note: <D>: 120V model only
<P>: European model only
<WT>: Worldwide model only
<GT>: 220-230 V model only
<A>: Australian model only
<R>: Chinese model only

PRINTED CIRCUIT BOARD-PARTS LIST

DISPLAY CIRCUIT PC BOARD (NADIS-7002-1A/1B/1C/1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
Q8501	212199A	16-BT-66GK
	Remote sensor	
U8501	241330	PIC-26043TE2
	IC	
Q8503	22241598	M30218MC-A208FP
	Transistors	
Q8502	2213145R2,	2SC2712-GR,
	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2213146R2,	2SC2712-BL,
	2216173R2,	KTC3875-O,
	2216174R2,	KTC3875-Y,
	2216175R2 or	KTC3875-GR or
	2216176R2	KTC3875-BL
Q8504,Q8505	2214480R2 or	RN1403 or
	2216200R2	KRC103S
Q8506	2214540R2 or	RN2403 or
	2216230R2	KRA103S
	Diodes	
D8501	223234R2 or	1SS352 or
D8505,D8506	223233R1	1SS355
D8502	225290	SEL4110R
D8503	225291D	SEL4910D-D
D8504	224490820R2	UDZ8.2B
D8507	224490510R2	UDZ5.1B
	Coils	
L8501	231237M022R2	NCH-1471
L8505	231237K470R2	NCH-1479
	Oscillator	
X8501	3010334	CSTS1000MG03,Ceramic
	Capacitors	
C8506	354744709	47 μ F,16V,Elect.
C8514	354784709	47 μ F,50V,Elect.
C8517	375524744	0.47 μ F±5%,50V,Plastic
C8518	355722219	220 μ F,6.3V,Elect.
	Resistor	
R8547	49163104415	RM1/10IJ-100K*15,Array
	Switches	
S8501-S8531	25035652	NPS-111-S604
S8532	25065608	EC11B30C17
	Sockets	
JL8501A	25051109	NSCT-5P896
JL8502A	25051107	NSCT-3P894
P7001B	25052081,	NSCT-35P1868,
	25050941,	NSCT-35P728,
	25051339,	NSCT-35P1128,
	25051879 or	NSCT-35P1666 or
	25052268	NSCT-35P2165
	Holder	
Q8501A	27191074	(FL)

VOLUME PC BOARD (NAETC-6994-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
S8533	25065575	EC16B2425,Encoder
JL8502B	25050280	NSCT-3P108,Socket

HEADPHONE TERMINAL PC BOARD (NAETC-7003-1A/1B/1C/1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
L8502-L8504	231237M022R2	NCH-1471,Coil
P8503	25045514	YKB26-5005,Headphone <D/P>
P8503	25045385	YKB26-5153,Headphone <GT/A/WT/R>
JL8501B	25051109	NSCT-5P896,Socket

PREAMPLIFIER PC BOARD (NAAF-6990-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q3001,Q3004	22241448R2,	NJM4580M-D,
Q3041,Q3201	22240489R1NE or	MPC4570G2-T1 or
Q3204,Q3251	22241555R2	NJM4580M
Q3002	22241220R2	TC9459F
Q3005	22241451R9	NJU7306G
Q3006,Q3206	22241450R2 or	NJM2082M-D or
	22241567R2	NJM2082M
Q3007,Q3207	22241472R2	NJM2114M-D
Q3012	22240191	NJM4565D-D
Q3051	22241472R2,	NJM2114M-D,
	22241409R2,	BA15532F,
	22241449R2 or	NJM5532M-D or
	22241556R2	NJM2114M
Q3202	22241371	TC9482N
Q3205	22241451R9	NJU7306G
Q3301,Q3304	22241448R2,	NJM4580M-D,
Q3351,Q3501	22240489R1NE or	MPC4570G2-T1 or
Q3504,Q3551	22241555R2	NJM4580M
Q3801	22240786	TC9274N-006
Q3802	22240981R2	TC9162AF
Q3803	22240943R2	TC9163AF
Q3807	22241448R2	NJM4580M-D

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q3003,Q3103	2215410R2	RN1441
Q3008-Q3011	2215410R2	RN1441
Q3108-Q3111	2215410R2	RN1441
Q3208,Q3209	2215410R2	RN1441
Q3308-Q3311	2215410R2	RN1441
Q3408-Q3411	2215410R2	RN1441
Q3508,Q3509	2215410R2	RN1441
Q3608,Q3609	2215410R2	RN1441
Q3708,Q3709	2215410R2	RN1441
Q3901	2214530R2 or	RN2402 or
	2216220R2	KRA102S
	Diodes	
D3901	224550510R2 or	UDZS5.1B or
	224490510R2	UDZ5.1B
D3902	223234R2 or	1SS352 or
	223233R1	1SS355
	Capacitors	
C3001,C3011	393884707	47 μ F,50V,Elect.
C3005,C3006	393881007	10 μ F,50V,Elect.
C3009,C3044	393881017	100 μ F,50V,Elect.
C3012,C3112	374724724	4700pF±5%,50V,Plastic
C3017,C3117	374721044	0.1 μ F±5%,50V,Plastic
C3018,C3105	393881007	10 μ F,50V,Elect.

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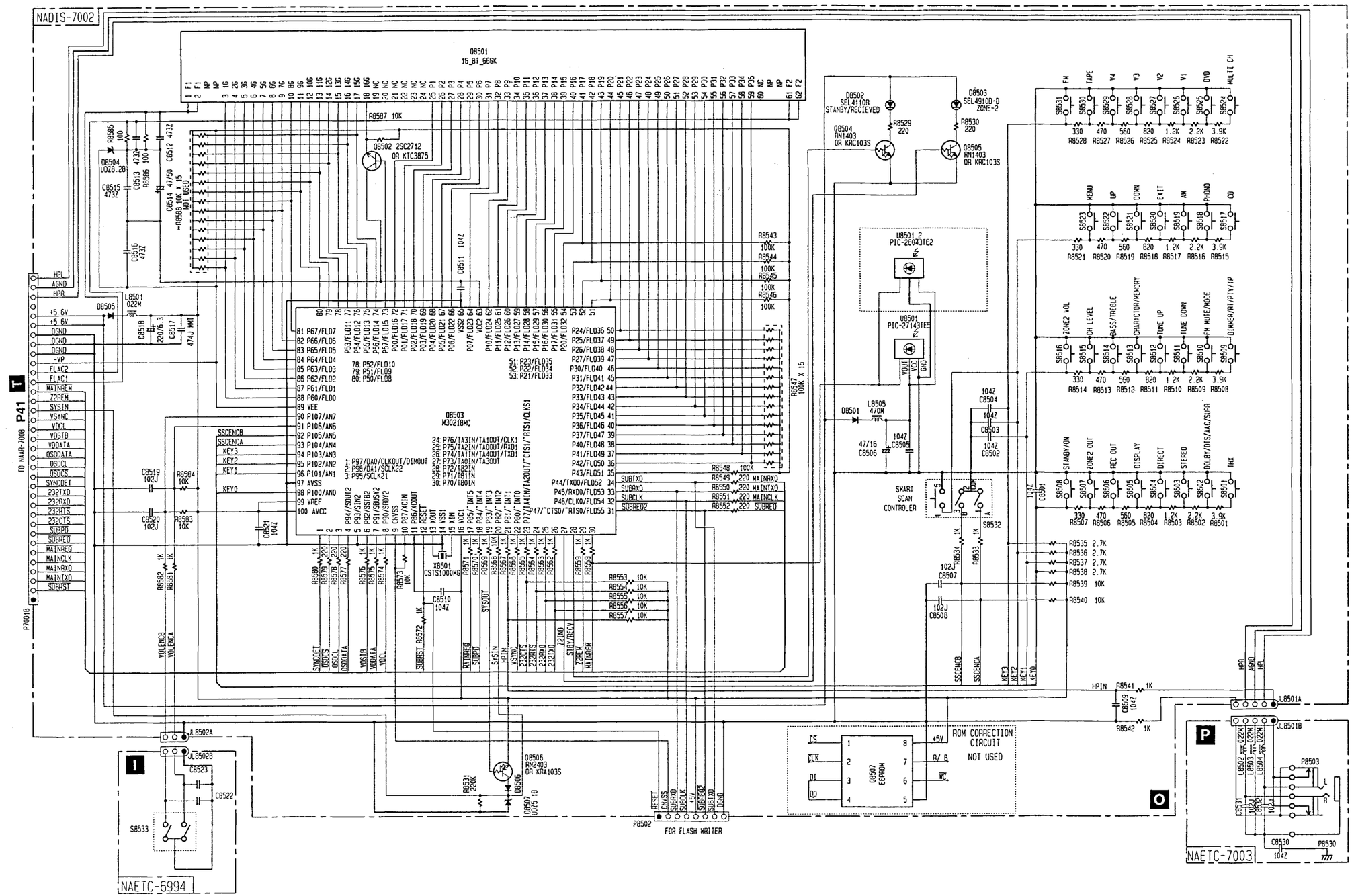
SCHEMATIC DIAGRAM
DISPLAY SECTION



CIRCUIT NO.	PART NO.	DESCRIPTION
C8804	353780109	1 μF,50V,Elect. <P/T/W/A/R>
	Thermistor	
R8901	4000195	RXE030 <D>
R8902	4000195	RXE030 <P/T/W/A/R>
	Terminals	
P4901,P4902	25045571 or	NPJ-6PDRW386 or
	25045300	NPJ-6PDBL159
	Sockets	
P4904B	25051527	NSCT-16P1314
P4905B	25051232	NSCT-7P1022
P4906B	25051234	NSCT-9P1024
	Plug	
P2203B	25055234	NPLG-3P218

IR TERMINAL PC BOARD (NAETC-7006-1A/1B/1C/1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q8803-Q8806	2214470R2 or	RN1402 or
	2216190R2	KRC102S
	Photo couplers	
Q8801,Q8802	24120043,	ON3131,
	24120044 or	ON3131-R or
	24120045	ON3131-S
	Diode	
D8801	223234R2 or	1SS352 or
	223233R1	1SS355
	Capacitors	
C8801,C8802	374722234	0.022 μF±5%,50V,Plastic
C8805	353721019	100 μF,6.3V,Elect.
	Switch	
S8801	25065414	NSS-22155 <WT/R>
	Terminals	
P8801,P8802	25045504	NPJ-1PDBL319
P8803	25045504	NPJ-1PDBL319 <D>
	Socket	
P8805B	25051235	NSCT-10P1025

Note: <D>: 120V model only
<P>: European model only
<WT>: Worldwide model only
<GT>: 220-230 V model only
<A>: Australian model only
<R>: Chinese model only

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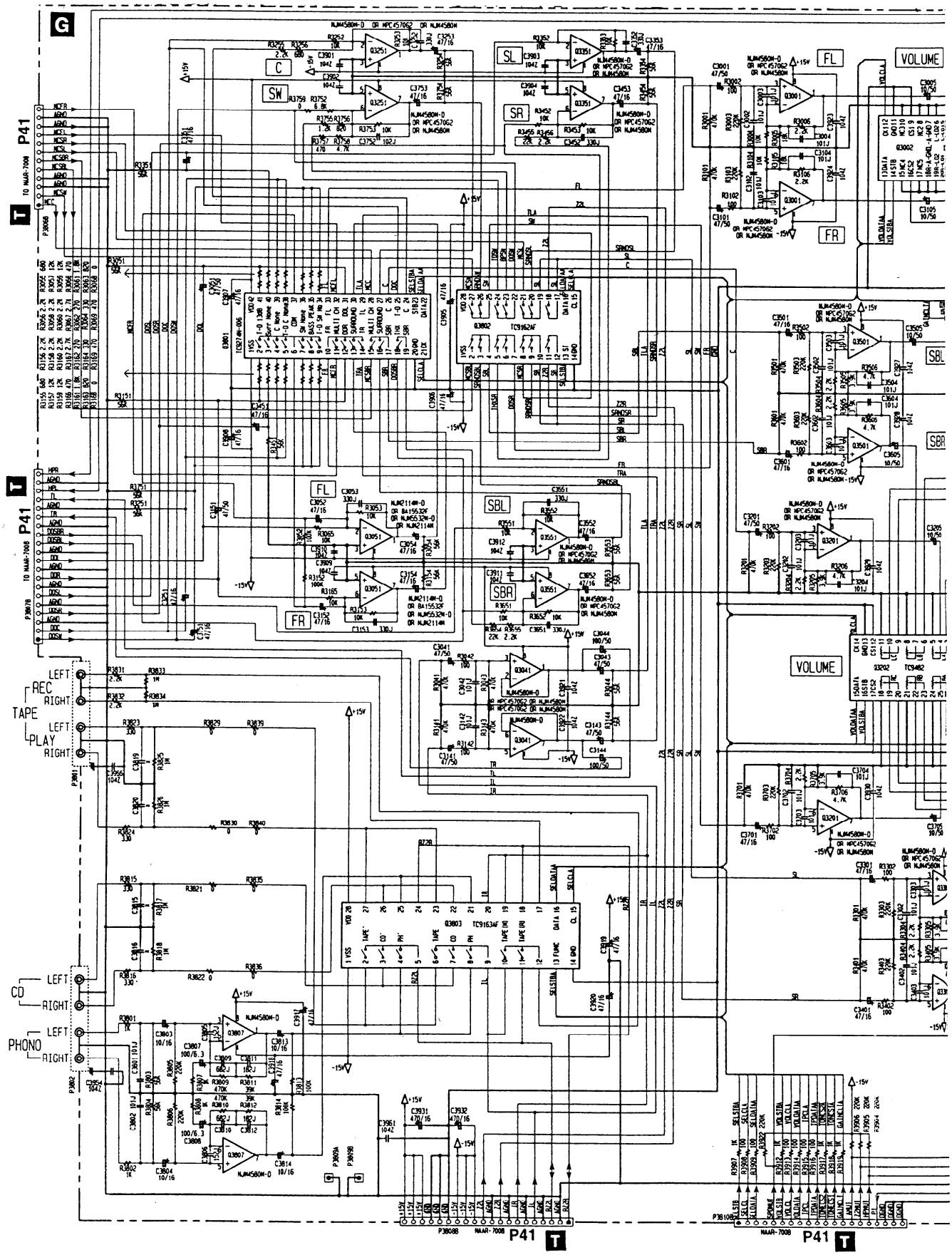
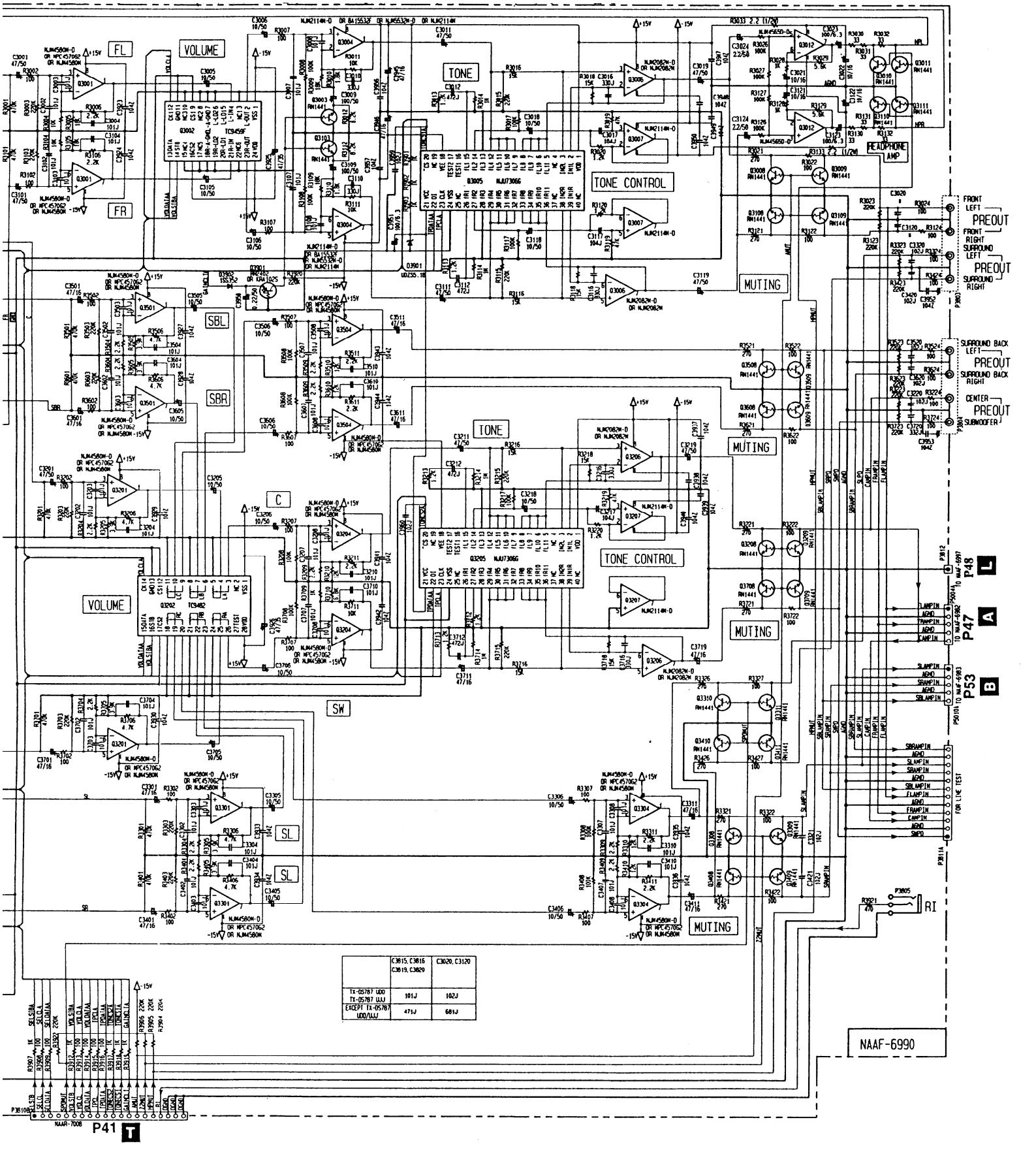
CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C3019,C3041	393884707	47 μF,50V,Elect.
C3020,C3120	374721024	1000pF±5%,50V,Plastic <D>
	374726814	680pF±5%,50V,Plastic<P/WT/WR/A>
C3021,C3022	354741009	10 μF,16V,Elect.
C3023,C3123	354721019	100 μF.6.3V.Elect.
C3024,C3124	354780229	2.2 μF,50V,Elect.
C3043,C3051	393884707	47 μF,50V,Elect.
C3052,C3054	393844707	47 μF,16V,Elect.
C3101,C3111	393884707	47 μF,50V,Elect.
C3106,C3118	393881007	10 μF,50V,Elect.
C3109,C3144	393881017	100 μF,50V,Elect.
C3119,C3141	393884707	47 μF,50V,Elect.
C3121,C3122	354741009	10 μF,16V,Elect.
C3143,C3151	393884707	47 μF,50V,Elect.
C3152.C3154	393844707	47 μF,16V,Elect.
C3201,C3211	393884707	47 μF,50V,Elect.
C3205,C3206	393881007	10 μF,50V,Elect.
C3212	374724724	4700pF±5%,50V,Plastic
C3217	374721044	0.1 μF±5%,50V,Plastic
C3218	393881007	10 μF,50V,Elect.
C3219	393884707	47 μF,50V,Elect.
C3220,C3320	374721024	1000pF±5%,50V,Plastic
C3251,C3253	393844707	47 μF,16V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C3301,C3311	354744709	47 μF,16V,Elect.
C3305,C3306	354781009	10 μF,50V,Elect.
C3321,C3420	374721024	1000pF±5%,50V,Plastic
C3351,C3353	354744709	47 μF,16V,Elect.
C3401,C3411	354744709	47 μF,16V,Elect.
C3405,C3406	354781009	10 μF,50V,Elect.
C3421,C3520	374721024	1000pF±5%,50V,Plastic
C3451,C3453	354744709	47 μF,16V,Elect.
C3501,C3511	354744709	47 μF,16V,Elect.
C3505,C3506	354781009	10 μF,50V,Elect.
C3552,C3652	354744709	47 μF,16V,Elect.
C3601,C3611	354744709	47 μF,16V,Elect.
C3605,C3606	354781009	10 μF,50V,Elect.
C3620	374721024	1000pF±5%,50V,Plastic
C3701,C3711	354744709	47 μF,16V,Elect.
C3705,C3706	354781009	10 μF,50V,Elect.
C3719,C3751	354744709	47 μF,16V,Elect.
C3720	374723324	3300pF±5%,50V,Plastic
C3753	354744709	47 μF,16V,Elect.
C3803,C3804	354741009	10 μF,16V,Elect.
C3805,C3806	374721524	1500pF±5%,50V,Plastic
C3807,C3808	354721019	100 μF.6.3V,Elect.
C3809,C3810	374726824	6800pF±5%,50V,Plastic
C3811,C3812	374721824	1800pF±5%,50V,Plastic
C3813,C3814	354741009	10 μF,16V,Elect.
C3905-C3908	354744709	47 μF,16V,Elect.
C3917-C3920	354744709	47 μF,16V,Elect.
C3925,C3926	354764709	47 μF,35V,Elect.
C3931,C3932	354744719	470 μF,16V,Elect.
C3945,C3946	354744709	47 μF,16V,Elect.
C3951	354721019	100 μF,6.3V,Elect.
C3958	354782299	0.22 μF,50V,Elect.
	Resistors	
R3033,R3133	453530224	2.2 Ω±5%,1/2W,Metal
	Terminals	
P3801-P3803	25045575 or	NPJ-4PDRW389 or
	25045303	NPJ-4PDBL162
P3804	25045586	NPJ-4PDBRW397
P3805	25045504	NPJ-1PDBL319
	Sockets	
P3806B	25051237	NSCT-12P1027
P3807B,P3808B	25051241	NSCT-20P1031
P3810B	25051241	NSCT-20P1031
	Plugs	
P3811A	25055142	NPLG-12P126
P5004A,P5010A	25055135	NPLG-5P119

SCHEMATIC DIAGRAM
PREAMPLIFIER SECTION



D | E | F | G



	C3615, C3616 C3619, C3620	C3020, C3120
TX-D5787 UDO	101J	102J
TX-D5787 UUJ		
EXCEPT TX-D5787 UDO/UUJ	471J	681J

COMPONENT VIDEO TERMINAL PC BOARD (NAVD-6998-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q2303,Q2304	2213145R2,	2SC2712-GR,
	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2216173R2,	KTC3875-O,
	2216174R2 or	KTC3875-Y or
	2216175R2	KTC3875-GR
	Diodes	
D2301-D2304	223234R2 or	1SS352 or
	223233R1	1SS355
	Relays	
RL2301-RL2304	25065610	NRL-2F1A-DC4.5-156
	Terminals	
P2301-P2303	25045629	NPJ-3PDGLR436
	Socket	
JL2301A	25051109	NSCT-5P896

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VIDEO INPUT/OUTPUT TERMINAL PC BOARD (NAAF-7004-1A/1B/1C/1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q4906	22241448R2,	NJM4580M-D,
	22240489R1NE or	MPC4570G2-T1 or
	22241555R2	NJM4580M
Q4907	22240829	TC9274N-008
	Transistors	
Q8807	2212855 or	2SB1068-U or
	2212853	2SB1068-K <D>
Q8808	2212855 or	2SB1068-U or
	2212853	2SB1068-K <P/T/W/A/R>
Q8809	2214470R2 or	RN1402 or
	2216190R2	KRC102S <D>
Q8810	2214470R2 or	RN1402 or
	2216190R2	KRC102S <P/T/W/A/R>
	Capacitors	
C4917-C7920	354780229	2.2μF,50V,Elect.
C4921,C4922	354780229	2.2μF,50V,Elect.
C4925,C4926	354784709	47μF,50V,Elect.
C4961,C4962	354744709	47μF,16V,Elect.
C4967,C4968	354744709	47μF,16V,Elect.
C8803	353780109	1μF,50V,Elect. <D>

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DSP CIRCUIT PC BOARD (NADG-6989-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301,Q302	22241448R2,	NJM4580M-D,
	22240489R1NE or	MPC4570G2-T1 or
	22241555R2	NJM4580M
Q303-Q306	22241472R2,	NJM2114M-D,
	22241409R2,	BA15532F,
	22241449R2 or	NJM5532M-D or
	22241556R2	NJM2114M
Q701	22274541ER2TO	TC74VHC541FT
Q702	222740077R2TO	TC74HCT7007AF
Q703	22278033DR2NEC	MPC2933T
Q704	22241515R2	PQ025EZ5MZP
Q705	22241520R2	AK4112AVF
Q706	22241521R3	AK4356VQ
Q707	22241522R2	AK4528VF
Q808	22241518R9	CS493263-CL
Q809	22240935R2	TC7WU04FU
Q810	22274074ER2TO	TC74VHC74FT
Q811	22274000GR2TO	TC74VHCT00AFT
Q812	22241519R3	XCB56364FU100
Q813	22241516R3,	TC55V8128BFT-10,
	22241536R3 or	TC55V8128BFT-12 or
	22241560R2	CY7C1019V33-15VCT
	Diodes	
D301-D308	223234R2 or	1SS352 or
D801,D802	223233R1	1SS355
	Coils	
L301,L302	231237M022R2	NCH-1471
L701,L702	231237M022R2	NCH-1471
L704,L705	230959R1	BK1608LL241-T
L706,L707	230958R1	BK1608LM182-T
L710,L720	231237M022R2	NCH-1471
L802-L808	231237M022R2	NCH-1471
	Oscillators	
X701	3010320,	AT-4912.288MHz,
	3010327 or	AT-4912.288MHz or
	3010335	AT-49H12.288MHz,Cryetal
X704	3010278	CST12.2MTW040,Ceramic
	Capacitors	
C301,C302	354744709	47μF,16V,Elect.
C310	354744709	47μF,16V,Elect.
C311,C312	374721524	1500pF±5%,50V,Plastic
C320,C322	354744709	47μF,16V,Elect.
C330 -C337	374722224	2200pF±5%,50V,Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
C338-C345	374724724	4700pF±5%,50V,Plastic
C346-C361	374726814	680pF±5%,50V,Plastic
C370-C377	354744709	47μF,16V,Elect.
C388,C389	354742219	220μF,16V,Elect.
C390	354724719	470μF,6.3V,Elect.
C391	354744709	47μF,16V,Elect.
C740,C744	354724719	470μF,6.3V,Elect.
C743,C747	354721019	100μF,6.3V,Elect.
C750,C757	354744709	47μF,16V,Elect.
C773,C783	354744709	47μF,16V,Elect.
C824,C830	354744709	47μF,16V,Elect.
C857	354744709	47μF,16V,Elect.
C861	374725624	5600pF±5%,50V,Plastic
	Sockets	
P701B-P703B	25051241	NSCT-20P1031

SECONDARY CIRCUIT PC BOARD (NAETC-7013-1A/1B/1D/1E/1F/1I)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q9201	2213640 or	DTC123JS or
	2215830	KRC105M
	Diodes	
D9201	22380022 or	RBV402 or
	22380285	RS403M
D9202-D9207	22380260,	RL1N4003,
	22380032 or	1SR139-100 or
	22380035	GP104003E
D9208,D9209	223234R2 or	1SS352 or
	223233R1	1SS355
	Capacitors	
C9203	354744729	4700μF,16V,Elect.
C9204	354741029	1000μF,16V,Elect.
C9207	354762229	2200μF,35V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C9208	354761029	1000μF,35V,Elect.
C9211	354781019	100μF,50V,Elect.
C9212	354771019	100μF,63V,Elect.
	Resistors	
R9201,R9203	452530224	2.2Ω±5%,1/2W,Metal
R9202	452532294	0.22Ω±5%,1/2W,Metal
R9204	442625604	56Ω±5%,1W,Metal oxide
	Labels	
F9201A,F9202A	29361747	T2.5AL250V <P/GT/WT/R/A>
	Fuses	
F9201,F9202	252160	⚠ 2.5A-UL/T-237 <D>
	252241 or	⚠ 2.5A-SE-TL250V or
	252075	⚠ 2.5A-SE-FAK <P/A/R/WT/GT>
	Fuse holders	
F9211-F9214	25052133	⚠ NSCT-1P2031

FL TUBE VIEW

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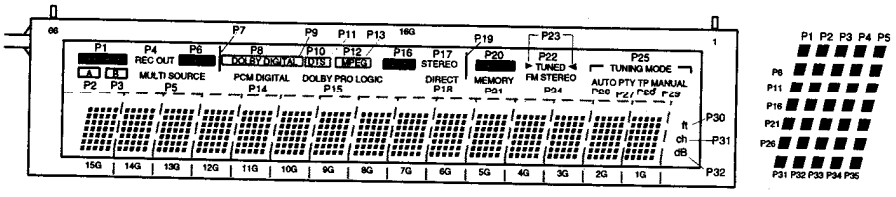
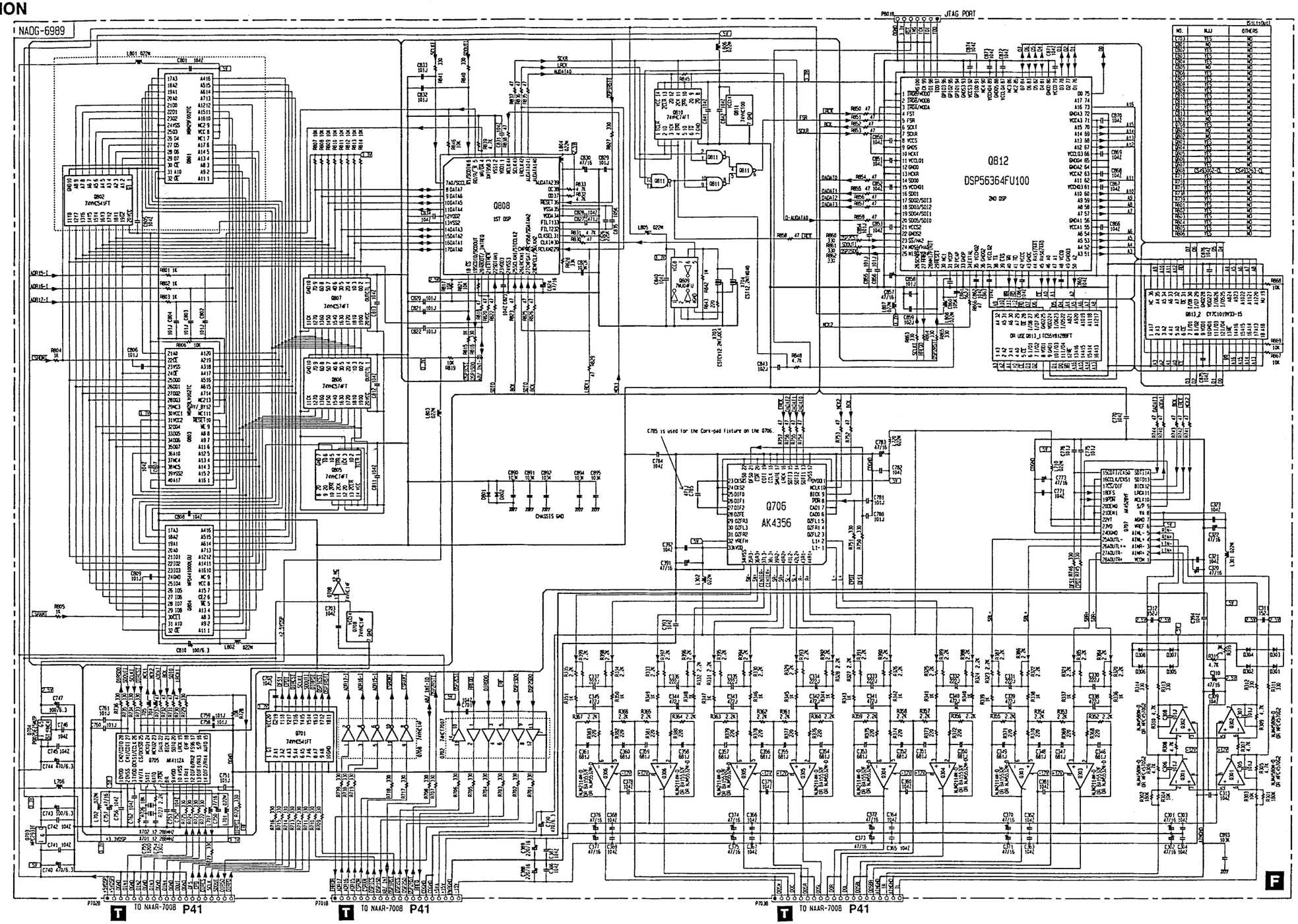
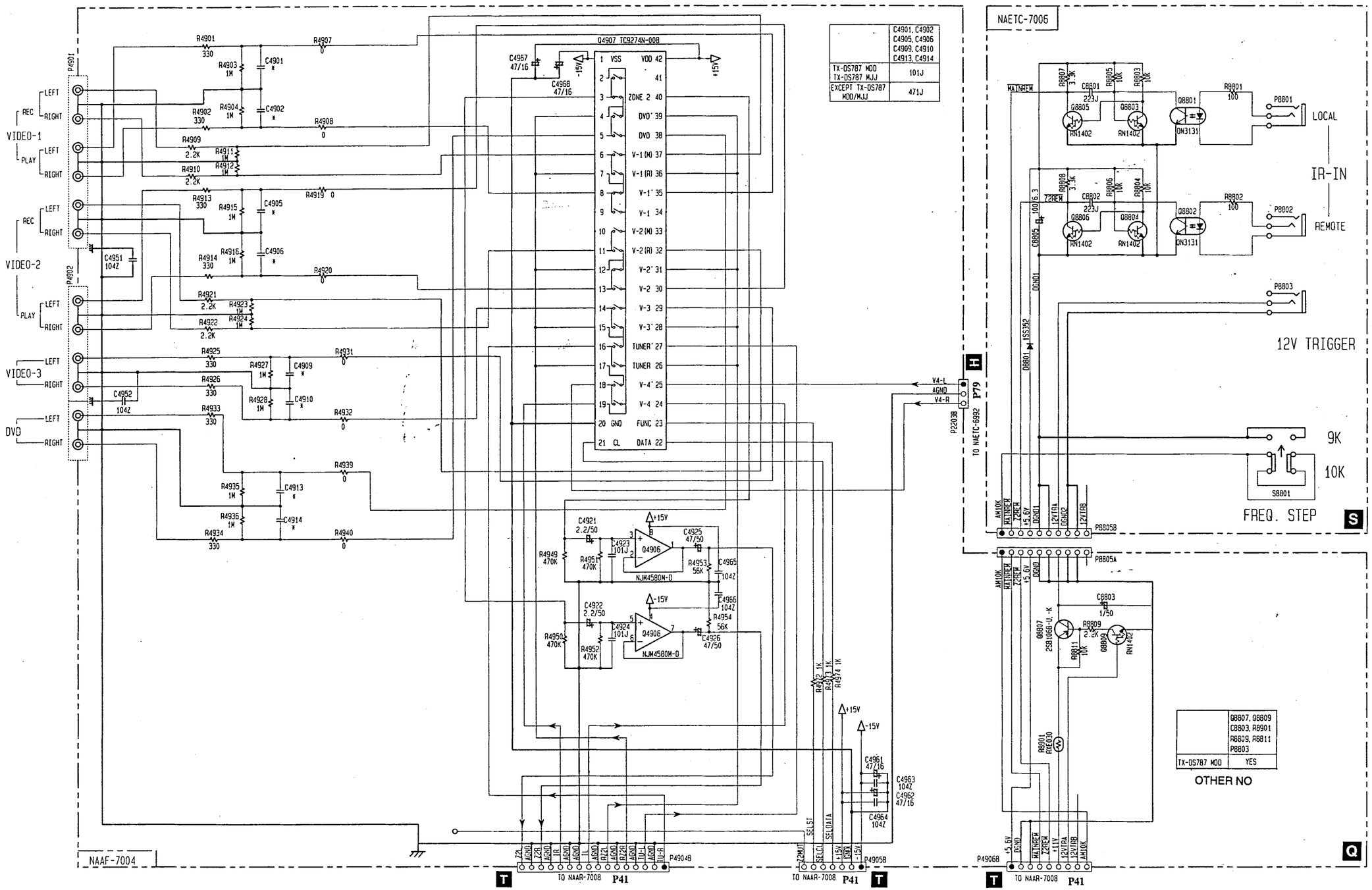


SCHEMATIC DIAGRAM
DSP SECTION



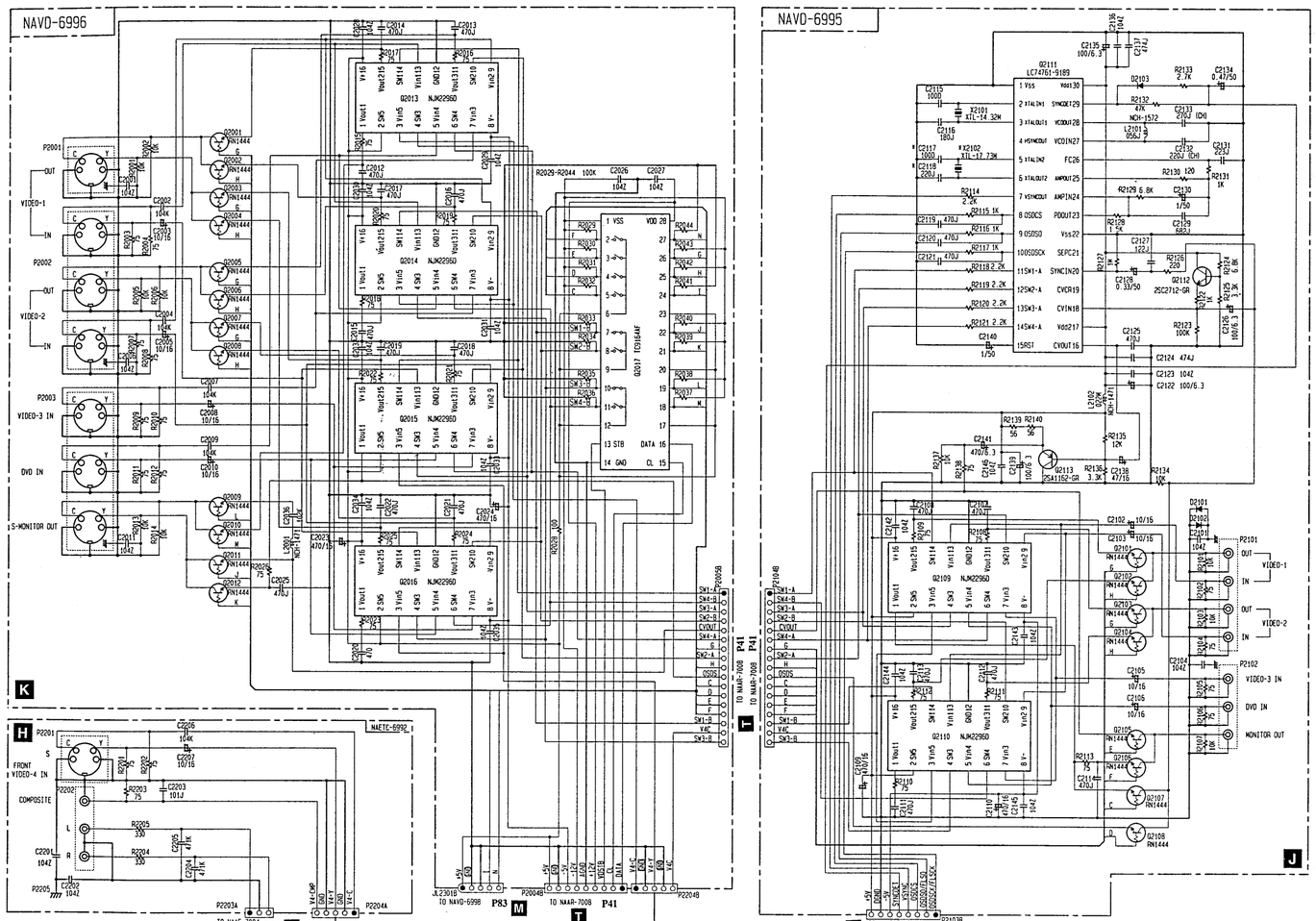
SCHEMATIC DIAGRAM
VIDEO AUDIO SECTION



TX-DS787

SCHEMATIC DIAGRAM

VIDEO INPUT/OUTPUT SECTION



PRINTED CIRCUIT BOARD-PARTS LIST

FRONT TERMINAL PC BOARD (NAETC-6992-1A/1B/1C)

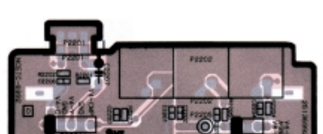
CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitor	
C2207	353741009	10 μF,16V,Elect.
	Terminal	
P2202	25045630	NPJ-3PDB437 <D/P>
P2202	25045631	NPJ-3PDB438 <GT/WT/R/A>
	Sockets	
P2201	25051961	NSCT-4P1748 <D/P>
P2201	25051569	NSCT-4P1356 <GT/WT/R/A>
P2203A	2009990513UL	NSAS-6P0675
P2204A	2009990434UL	NSAS-10P0578

VIDEO TERMINAL PC BOARD (NAVD-6995-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D2101-D2103	223234R2 or	1SS352 or
	223233R1	1SS355
	Coils	
L2101	231292J056R2	NCH-1572
L2102	231237M022R2 or	NCH-1471 or
	231237K022R2	NCH-1471
	Oscillators	
X2101	3010167	XTL-14.32M
X2102	3010238	XTL-17.73M <P/WT/R/GT/A>
	Capacitors	
C2102,C2103	354741009	10 μF,16V,Elect.
C2105,C2106	354741009	10 μF,16V,Elect.
C2109,C2110	354744719	470 μF,16V,Elect.
C2122,C2126	354721019	100 μF,6.3V,Elect.
C2124,C2137	375524744	0.47 μF±5%,50V,Plastic
C2127	374721224	1200pF±5%,50V,Plastic
C2128	354783399	0.33 μF,50V,Elect.
C2129	374726824	6800pF±5%,50V,Plastic
C2130,C2140	354780109	1 μF,50V,Elect.
C2131	374722234	0.022 μF±5%,50V,Plastic
C2134	354784799	0.47 μF,50V,Elect.
C2135,C2139	354721019	100 μF,6.3V,Elect.
C2138	354744709	47 μF,16V,Elect.
C2141	354724719	470 μF,6.3V,Elect.
	Terminals	
P2101	25045339	NPJ-4PDYE190
P2101	25045566	NPJ-4PDYE381
P2102	25045299	NPJ-3PDYE158
P2102	25045363	NPJ-3PDYE208
	Sockets	
P2103B	25051233	NSCT-8P1023
P2104B	25051528	NSCT-17P1315
	Plugs	
P2004A	25055705	NPLG-9P651
P2005A	25055806	NPLG-17P762

S VIDEO TERMINAL PC BOARD (NAVD-6996-1A/1B)

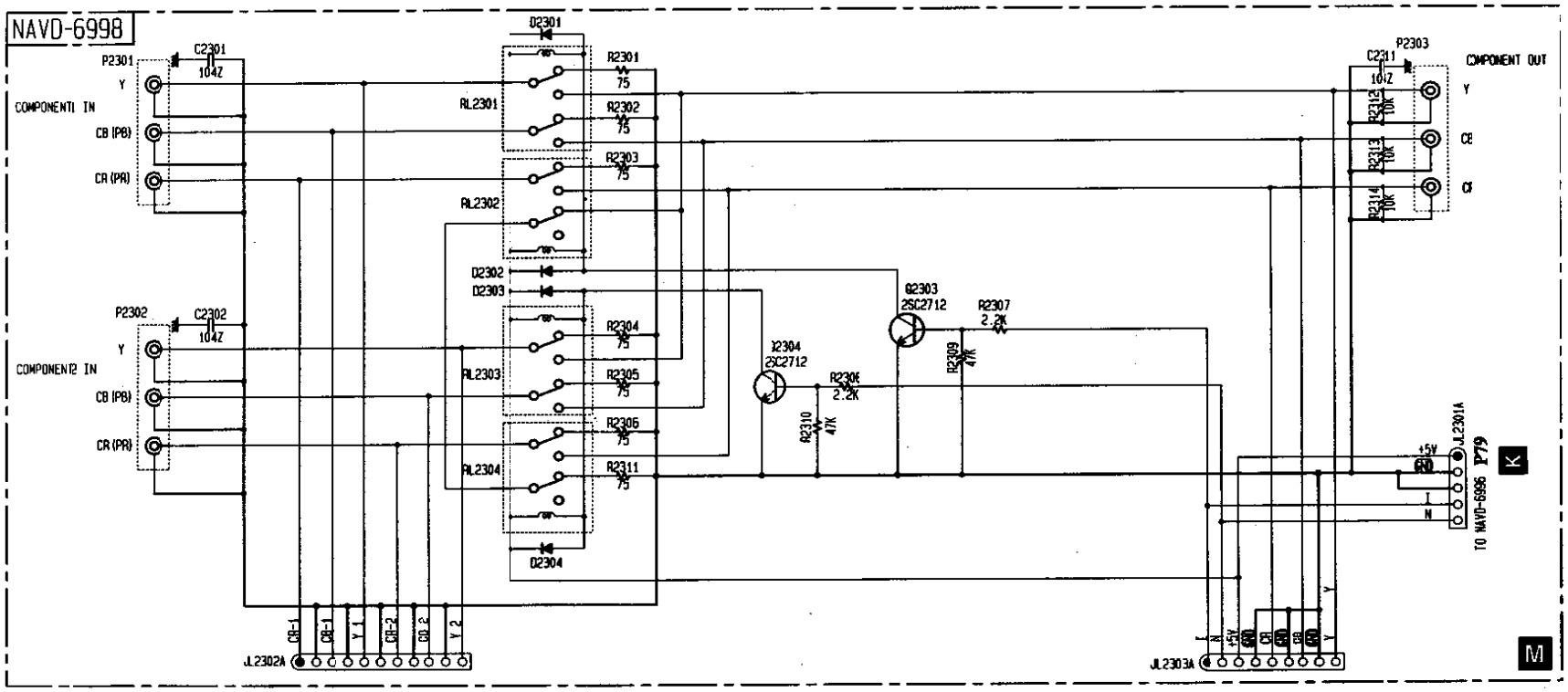
CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2013-Q2016	22241347	NJM2296D
Q2017	22241221R2	TC9164AF
Q2109,Q2110	22241347	NJM2296D
Q2111	22241037	LC74761-9189
	Transistors	
Q2001-Q2012	2216031R2 or	RN1444-A or
Q2101-Q2108	2216032R2	RN1444-B
Q2112	2213145R2,	2SC2712-GR,
	2213143R2,	2SC2712-O,
	2213144R2,	2SC2712-Y,
	2216173R2,	KTC3875-O,
	2216174R2 or	KTC3875-Y or
	2216175R2	KTC3875-GR
Q2113	2214375R2,	2SA1162-GR,
	2214373R2,	2SA1162-O,
	2214374R2,	2SA1162-Y,
	2216183R2,	KTA1504-O,
	2216184R2 or	KTA1504-Y or
	2216185R2	KTA1504-GR
	Coil	
L2001	231237M022R2 or	NCH-1471 or
	231237K022R2	NCH-1471
	Capacitors	
C2003,C2005	354741009	10 μF,16V,Elect.
C2008,C2010	354741009	10 μF,16V,Elect.
C2023,C2024	354744719	470 μF,16V,Elect.
	Sockets	
JL2301B	25050269	NSCT-5P97
P2001	25051750	NSCT-4P1537
P2002	25051568	NSCT-12P1355
P2003	25051568	NSCT-12P1355
P2004B	25051234	NSCT-9P1024
P2005B	25051528	NSCT-17P1315
	Plug	
P2204B	25055236	NPLG-5P220



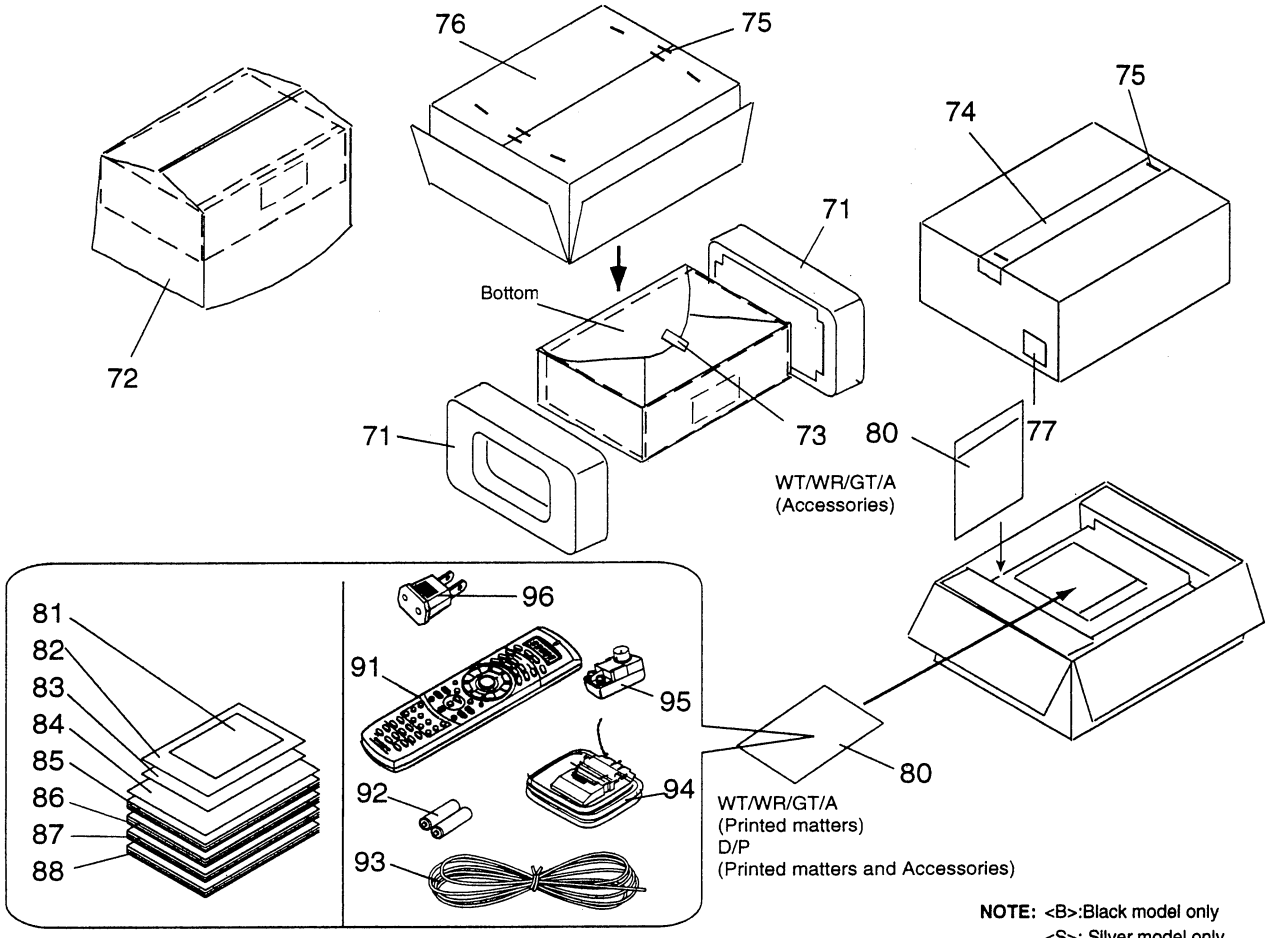
FRONT TERMINAL PC BOARD

A | B | C | D | E

SCHEMATIC DIAGRAM
COMPONENT VIDEO SECTION



PACKING VIEW



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
71	29091956	Pad
72	29100153	1020x720,Poly-bag
73	261504	Paper tape
74	29110098	PP tape
75	282301	Staple
76	29053635	Carton box <D>
	29053636	Carton box <B> <P>
	29053637	Carton box <B> <WT/A/R>
	29053638	Carton box <G>
	29053639	Carton box <S>
77	29362738	Label EAN <B> <P/WT/A/R>
	29362739	Label EAN <S>
	29362740	Label EAN <G>
	29362741	Label UPC <D>
80	29100097-1A	350*250,Poly bag
81	29365083A	Warranty card <D>
82	29095866	Sheet <D>
83	29342968	Instruction sheet <D>
84	29355349	Instruction sheet U10
85	29342963A	Instruction manual E
86	29342964A	Instruction manual GDSW <P>
87	29342965A	Instruction manual FSI <P>
88	29342969A	Instruction manual T <WT/GT>
	29342970A	Instruction manual C <R>
91	24140390B	RC-390M,Remote controller
92	3010054	UM-3,Battery
93	292115	FM antenna <P/WT/GT/R/A>
	292142	FM antenna <D>
94	232140	NMA-3057
95	25065462	YAE21-0237,Antenna adapter <WT/GT/R/A>
96	25055018 or 25056005	CV-K-1 or CV-K-1,Conversion plug <WT>

NOTE: <B>:Black model only
<S>: Silver model only
<G>: Golden model only
<D>: 120 V model only
<P>: European model only
<WT>: Worldwide model only
<GT>: 220-230 V model only
<R>: Chinese model only
<A>: Australian model only

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